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SO - 141

Forest Statistics for Arkansas Counties - 1988

F. Dee Hines and John S. Vissage

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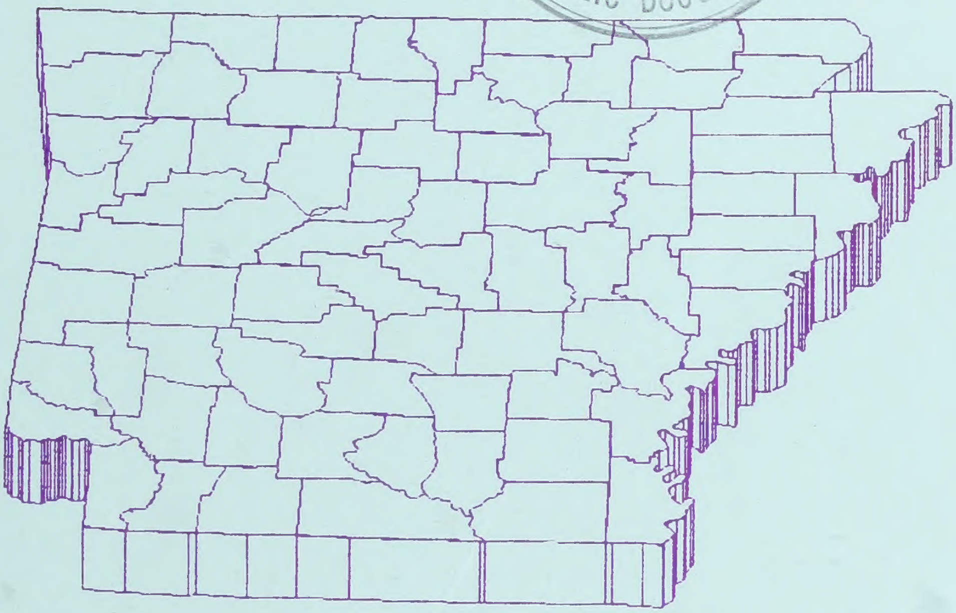

FOREWORD

The Southern Forest Survey, an activity of the Southern Forest Experiment Station Forest Inventory and Analysis work unit, covers the States of Alabama, Arkansas, Louisiana, Mississippi, Oklahoma, Tennessee, and East Texas, and the island of Puerto Rico.

This survey is part of the nationwide Forest Survey originally authorized by the McSweeney-McNary Act of 1928. More recent legislation pertinent to the survey mission includes the Forest and Rangeland Renewable Resources Planning Act of 1974 and the Forest and Rangeland Renewable Resources Research Act of 1978. The survey mission is to develop, analyze, and maintain renewable forest resource information. This information is essential for formulation of forest policies and programs.

ACKNOWLEDGMENTS

The Southern Station gratefully acknowledges the cooperation and assistance provided by the Arkansas Forestry Commission and forest industries in collecting field data. Appreciation is also expressed for the cooperation of other public agencies and other private landowners in providing access to the sample locations.

August 1988

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*Core tables are presented in response to the Southern Industrial Forestry Research Council's recommendations. These tables are identical among Forest Inventory and Analysis units in the eastern United States.

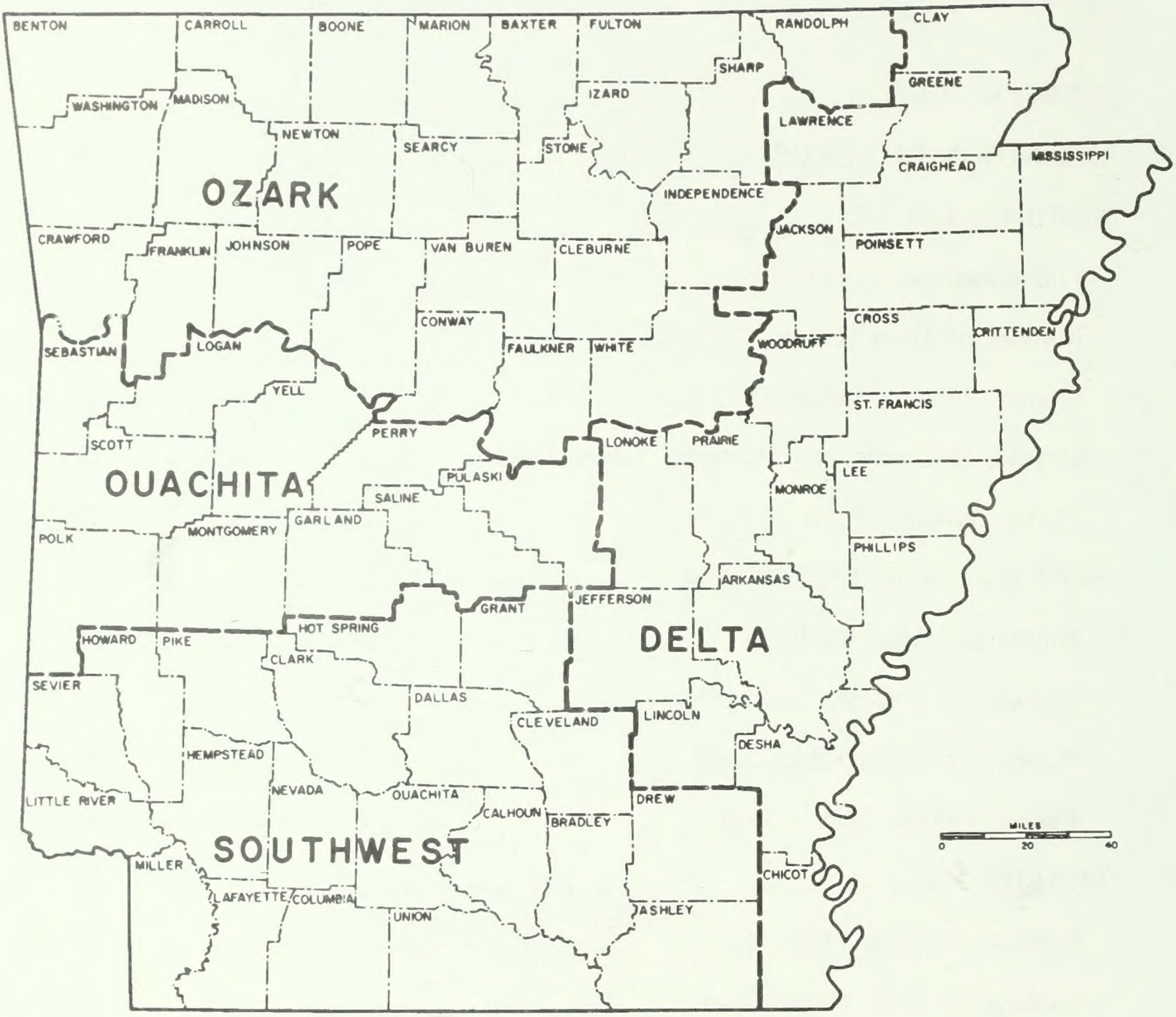

Figure I.—*The forest survey regions of Arkansas.*

Forest Statistics for Arkansas Counties – 1988

F. Dee Hines and John S. Vissage

INTRODUCTION

The tables and figures in this report were derived from data obtained during a recent inventory of the five survey regions and 75 counties in the State of Arkansas (fig. I). Data on forest-nonforest classification using aerial photographs was accomplished for points representing approximately 230 acres. These photo classifications were adjusted based on ground observations at sample locations representing approximately 3,840 acres. Finally, field measurements were made at forest locations on the intersections of grid lines spaced 3 miles apart. At these forest locations, per-acre estimates were obtained from trees measured on ten 37.5 basal area factor prism points.

The sampling methods were designed to achieve suitable sampling errors for estimates of area and volume at the State level. Sampling error increases as the area or volume considered decreases. The sampling errors presented in table I, equal to one standard deviation for the sample data, may be used to construct confidence intervals for population parameters. For example, at the 95 percent confidence level, the confidence interval for growing-stock volume (in million cubic feet) in the State of Arkansas (with a sampling error of 1.9 percent) is

$$18{,}991.1 \pm 1.96(0.019 \times 18{,}991.1) = 18{,}991.1 \pm 707.2$$

where 1.96 is the number of standard deviations. This confidence interval indicates that the actual growing-stock volume lies in the range 18,283.9 to 19,698.3 million cubic feet, unless a 1-in-20 chance of error has occurred.

Sampling errors for any combination of county data in the State may be estimated by the following formula:

$$SE_g = \frac{SE_t\sqrt{X_t}}{\sqrt{X_g}}$$

where:

SE = standard error of estimate (expressed as a percent)
X = variable of interest (area or volume)
g = group of counties to be combined
t = total for the State.

For example, the sampling error estimate of growing-stock volume for Polk, Howard, Sevier, and Little River counties is 8.2 percent. Thus, the 95 percent confidence interval for growing-stock volume is 1,020.2 ± 164.0 million cubic feet.

Ownership information is obtained by the same systematic sample outlined above. County courthouse records are used to obtain ownership information for each forested plot. An expansion factor representing timberland area in that county is then applied to the ownership group the plot represents. Next, the ownership groups are totaled for each county. Thus, acreages reported at the county level are estimates and may not exactly match known totals for each ownership category within that county.

In order to achieve greater compatibility among Forest Inventory and Analysis Projects, a new tree grading classification has been initiated for the 1988 Arkansas survey. Tree grade 5 is used for trees currently or prospectively capable of producing at least one 12-foot log or two 8-foot logs in the saw-log portion but not able to produce a 12-foot log in the butt 16 feet. These trees, formerly classed as rough or rotten, are now included in growing stock. Table II shows the impact of this change on volume and growth.

Table I—*Sampling errors*[1] *for timberland, growing stock, and sawtimber, Arkansas, 1988*

County	Timberland	Growing stock			Sawtimber
		Volume	Growth	Removals	volume
	Percent				
Arkansas	1.3	23.3	14.5	25.7	22.3
Ashley	1.2	7.6	7.4	10.8	8.7
Baxter	4.5	11.3	13.7	2.6	13.6
Benton	2.1	17.1	12.7	(2)	21.4
Boone	3.7	17.9	36.1	(2)	24.9
Bradley	1.2	7.1	7.3	11.3	8.6
Calhoun	1.7	9.4	8.9	15.7	10.9
Carroll	3.1	12.0	17.1	19.6	17.7
Chicot	1.8	23.3	39.8	22.9	25.6
Clark	1.8	8.3	9.5	10.8	9.7
Clay	1.5	29.5	24.5	...	32.5
Cleburne	3.0	10.8	15.4	20.9	15.1
Cleveland	0.8	11.1	10.2	11.3	9.4
Columbia	1.8	9.3	8.3	13.1	12.0
Conway	3.0	17.8	19.0	30.9	22.9
Craighead	0.7	21.9	28.5	...	22.5
Crawford	2.5	14.0	12.6	30.1	19.0
Crittenden[3]	0.8	23.2	20.9	33.3	30.6
Cross[4]	0.7	26.2	48.0	40.0	30.5
Dallas	2.0	8.5	6.5	12.6	10.6
Desha	2.1	15.9	17.6	30.1	17.9
Drew	2.4	6.9	7.6	8.6	8.3
Faulkner	3.1	14.5	17.1	28.3	20.3
Franklin	2.8	14.9	35.6	21.5	20.0
Fulton	3.7	12.1	19.5	46.8	16.1
Garland	1.9	9.4	12.5	18.0	11.6
Grant	0.9	11.4	9.1	13.4	13.7
Greene	1.7	18.7	15.5	29.5	21.1
Hempstead	2.0	11.1	13.9	20.9	14.2
Hot Spring	2.2	12.0	11.5	19.1	15.7
Howard	2.1	14.4	11.4	16.9	17.1
Independence	1.9	13.3	15.4	22.4	18.9
Izard	4.5	9.1	10.9	(2)	13.1
Jefferson	1.7	13.7	13.3	19.7	17.0
Johnson	2.1	11.0	15.5	36.0	14.3
Lafayette	1.8	12.1	8.8	16.8	14.7
Lawrence	1.9	49.9	31.5	41.0	(2)
Lee	1.6	15.8	27.1	22.5	19.6
Lincoln	2.0	19.7	23.0	20.4	20.3
Little River	2.8	18.8	17.6	21.1	24.0
Logan	2.2	13.4	16.4	37.1	16.2
Lonoke	1.7	25.1	34.6	...	21.1
Madison	1.9	11.0	13.3	20.5	14.8
Marion	4.9	13.8	18.2	...	17.7
Miller	1.9	13.8	9.0	21.0	17.4
Monroe	1.7	15.8	24.3	16.5	18.5
Montgomery	1.4	8.0	10.2	18.0	10.9
Nevada	1.4	9.1	8.0	14.2	11.2
Newton	1.6	7.9	7.8	30.0	11.4
Ouachita	1.7	8.2	7.7	13.2	10.0
Perry	2.0	10.8	13.8	16.1	12.7
Phillips	1.4	23.3	45.6	34.1	27.4
Pike	1.9	12.8	12.6	15.7	15.1
Poinsett	1.3	21.0	23.4	...	22.8
Polk	2.1	8.4	9.6	19.2	11.6
Pope	1.8	8.8	17.3	25.2	12.4
Prairie	0.9	38.5	39.3	...	30.2
Pulaski	1.7	10.8	18.0	21.4	13.1
Randolph	2.1	25.8	24.5	23.1	34.6
St. Francis	0.9	27.8	33.4	42.9	35.9
Saline	2.1	9.0	11.3	13.1	10.6
Scott	1.8	5.8	8.6	16.3	7.6

Table I—*Sampling errors[1] for timberland, growing stock, and sawtimber, Arkansas, 1988 - Continued*

County	Timberland	Growing stock			Sawtimber volume
		Volume	Growth	Removals	
	Percent				
Searcy	2.2	9.4	11.4	39.7	13.9
Sebastian	2.6	13.8	(2)	42.8	19.7
Sevier	2.3	12.4	10.7	19.2	15.8
Sharp	2.7	10.5	17.0	30.5	16.8
Stone	2.1	12.4	13.9	19.6	18.8
Union	1.0	6.4	6.2	10.1	7.7
Van Buren	1.8	11.4	11.6	40.2	13.6
Washington	1.8	11.5	14.1	30.5	16.6
White	1.8	28.3	11.9	27.7	32.2
Woodruff	1.3	19.2	21.6	23.6	23.1
Yell	1.5	10.6	9.8	21.2	10.9
All counties	0.2	1.9	1.7	2.7	2.2

[1] By random-sampling formula.

[2] Sampling error greater than 50.

[3] Mississippi included in Crittenden.

[4] Jackson included in Cross.

Table II–*Changes in volume and growth estimates due to inclusion of tree grade 5 in growing-stock inventory, Arkansas, 1988*

	Tree grade 5		
	Excluded from growing stock	Included in growing stock	Percent change
	Million cubic feet		
Softwood:			
Growing-stock volume	7841.0	7923.0	1.0
Rough and rotten volume	250.6	168.6	-32.7
Growing-stock growth	379.4	387.8	2.2
Hardwood:			
Growing-stock volume	10427.5	11068.1	6.1
Rough and rotten volume	2233.1	1592.6	-28.7
Growing-stock growth	353.9	425.6	20.3
	Million board feet		
Softwood:			
Sawtimber volume	33363.0	33664.6	.9
Sawtimber growth	1795.9	1825.6	1.7
Hardwood:			
Sawtimber volume	30533.1	33085.3	8.4
Sawtimber growth	1294.9	1582.9	22.2

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Tables 1-25 were developed to provide compatability among Forest Inventory and Analysis Projects. Tables 26-35 are supplementary tables and may change from unit to unit or State to State to address specific resource issues.

DEFINITION OF TERMS

Average net annual growth.—Average net annual volume increase for the inter-survey period.

Average annual mortality.—Average annual sound-wood volume of growing-stock trees dying from natural causes.

Average annual removal.—Average net annual volume of growing-stock trees removed from the inventory by harvesting, cultural operations (such as timber-stand improvement), land clearing, or changes in land use.

Commercial species.—Tree species which normally develop into trees suitable for industrial wood products.

Forest type.—A classification of forest land based upon the species forming a plurality of live-tree stocking.

Growing-stock trees.—Live trees of commercial species. Rough and rotten trees are excluded.

Growing-stock volume.—The cubic-foot volume of sound wood in growing-stock trees at least 5.0 inches in diameter at breast height, from a 1-foot stump to a minimum 4.0-inch top diameter outside bark of the central stem, or to the point where the central stem breaks into limbs.

Live trees.—Commercial and noncommercial tree species of sapling size or larger.

Natural stands.—Stands with no evidence of artificial regeneration. This includes those established by seed tree regeneration methods.

Noncommercial species.—Tree species of typically small size, poor form, or inferior quality which normally do not develop into trees suitable for industrial wood products.

Planted stands.—Stands with some evidence of planting or direct seeding.

Poletimber trees.—Growing-stock trees at least 5.0 inches in diameter at breast height, but smaller than sawtimber size.

Reserved timberland.—Productive public forest land withdrawn from timber utilization through statute or administrative regulations.

Rotten trees.—Live trees of commercial species that do not contain at least one 12-foot log or two 8-foot logs in the saw-log portion, now or prospectively, primarily because of rot.

Rough trees.—Live trees of commercial species that do not contain at least one 12-foot log or two 8-foot logs in the saw-log portion, now or prospectively, primarily because of roughness or poor form. Also included are all live trees of noncommercial species.

Saplings.—Growing-stock trees at least 1.0 inches but less than 5.0 inches in diameter at breast height.

Sawtimber trees.—Live trees that contain at least one 12-foot log, or two 8-foot logs in the saw-log portion, and meet regional specifications for freedom from defect. Softwoods must be at least 9.0 inches in diameter at breast height and hardwoods at least 11.0 inches in diameter at breast height.

Sawtimber volume.—Sound-wood volume of the saw-log portion of growing-stock sawtimber trees in board feet, International 1/4-inch rule and in cubic feet.

Seedlings.—Growing-stock trees less than 1.0 inches in diameter at breast height and greater than one foot tall for hardwoods, greater than six inches tall for softwoods, and greater than one-half inch in diameter at ground level for longleaf pine.

Select red oaks.—A classification of several red oak species composed of: cherrybark, Shumard, and northern red oaks.

Select white oaks.—A classification of several white oak species composed of: white, swamp chestnut, swamp white, chinkapin, Durand, and bur oaks.

Site class.—A classification of forest land in terms of inherent capacity to grow crops of industrial wood.

Stand-size class.—A classification of forest land based on the diameter class of growing-stock trees on the sampled area; that is, sawtimber, poletimber, or sapling and seedling.

Timberland.—Forest land that is producing, or is capable of producing, crops of industrial wood and not withdrawn from timber utilization.

Timberland is synonymous with "commercial forest land" in prior reports.

Tree grade. – A classification of the volume of the saw-log portion of sawtimber trees, based on: 1) the log grade of the butt log, or 2) ability to produce at least one 12-foot or two 8-foot logs in the upper-section of the saw-log portion.

Woodland. – Forest land incapable of yielding crops of industrial wood because of adverse site conditions.

CORE TABLES 1-25

Table 1–*Area by county and land class, Arkansas, 1988*

County	All land[1]	Forest land				Nonforest land
		Total	Timberland[2]	Woodland[3]	Reserved timberland	
	Thousand acres					
Arkansas	643.8	190.7	190.7	...	...	453.0
Ashley	597.5	377.4	377.4	...	...	220.1
Baxter	349.3	255.5	209.2	31.7	14.6	93.8
Benton	539.8	218.8	210.7	5.7	2.4	321.1
Boone	373.7	144.0	126.7	17.3	...	229.7
Bradley	418.6	353.6	353.6	...	...	65.1
Calhoun	402.2	330.7	330.7	...	...	71.5
Carroll	405.7	205.6	183.3	22.2	...	200.2
Chicot	415.6	83.7	83.7	...	...	331.9
Clark	554.6	405.4	405.4	...	...	149.3
Clay	410.2	78.5	78.5	...	...	331.8
Cleburne	352.3	226.5	226.5	...	...	125.8
Cleveland	383.1	330.7	330.7	...	...	52.4
Columbia	490.9	381.5	381.5	...	...	109.5
Conway	357.4	163.9	163.9	...	...	193.5
Craighead	456.5	49.0	49.0	...	...	407.5
Crawford	379.9	218.2	211.6	6.6	...	161.7
Crittenden[4]	957.3	49.0	49.0	...	...	908.3
Cross[5]	803.3	112.4	112.4	...	...	691.0
Dallas	427.3	362.5	362.5	...	...	64.9
Desha	477.7	150.8	150.8	...	...	326.9
Drew	532.1	386.2	386.2	...	...	145.9
Faulkner	413.1	168.4	168.4	...	...	244.7
Franklin	389.6	231.2	231.2	...	...	158.3
Fulton	394.3	206.7	189.9	16.8	...	187.6
Garland	420.4	333.7	328.9	...	4.8	86.7
Grant	405.1	335.9	335.9	...	...	69.2
Greene	370.3	55.7	55.7	...	...	314.5
Hempstead	463.7	277.4	277.4	...	...	186.3
Hot Spring	393.6	276.9	276.9	...	...	116.7
Howard	367.1	250.7	250.7	...	...	116.4
Independence	488.6	193.0	187.3	5.7	...	295.6
Izard	372.0	244.7	207.1	37.6	...	127.3
Jackson[5]	...	...	...	...	...	...
Jefferson	564.4	218.8	218.8	..	...	345.6
Johnson	432.4	290.9	285.2	...	5.7	141.4
Lafayette	331.3	224.4	224.4	...	...	106.8
Lawrence	377.0	84.6	84.6	...	...	292.4

Table 1–*Area by county and land class, Arkansas, 1988 - Continued*

County	All land[1]	Forest land				Nonforest land
		Total	Timberland[2]	Woodland[3]	Reserved timberland	
	Thousand acres					
Lee	385.1	98.4	98.4	...	...	286.7
Lincoln	360.0	153.2	153.2	...	...	206.8
Little River	330.1	166.9	166.9	...	...	163.3
Logan	448.9	252.9	242.1	6.1	4.7	196.0
Lonoke	501.0	75.8	75.8	...	...	425.2
Madison	536.0	382.3	376.2	6.2	...	153.6
Marion	375.8	263.3	196.5	41.7	25.2	112.4
Miller	396.2	170.1	170.1	...	...	226.1
Mississippi[4]	...	...	...	...	...	...
Monroe	389.6	140.4	140.4	...	...	249.2
Montgomery	495.7	413.4	413.4	...	...	82.2
Nevada	397.1	306.0	306.0	...	...	91.1
Newton	526.7	450.2	377.3	5.6	67.3	76.5
Ouachita	471.6	392.9	392.9	...	...	78.7
Perry	352.3	263.8	260.8	...	3.0	88.4
Phillips	438.6	94.4	94.4	...	...	344.2
Pike	383.0	303.9	303.9	...	...	79.1
Poinsett	487.9	54.9	54.9	...	...	433.0
Polk	550.6	408.9	381.6	5.5	21.8	141.7
Pope	524.8	365.1	353.7	...	11.4	159.7
Prairie	419.6	77.6	77.6	...	...	341.9
Pulaski	490.8	201.8	201.8	...	...	289.0
Randolph	419.8	176.6	176.6	...	...	243.2
St. Francis	408.6	67.1	67.1	...	...	341.5
Saline	464.1	356.8	349.7	...	7.1	107.3
Scott	573.7	448.2	442.7	...	5.5	125.6
Searcy	427.5	314.9	285.5	5.8	23.6	112.6
Sebastian	342.3	156.3	149.6	...	6.7	186.1
Sevier	358.5	227.9	227.9	...	...	130.7
Sharp	387.9	230.6	219.3	11.2	...	157.4
Stone	387.8	314.7	309.0	5.7	...	73.1
Union	674.0	584.9	584.9	...	...	89.1
Van Buren	454.0	345.9	345.9	...	...	108.1
Washington	608.5	264.0	259.0	5.0	...	344.5
White	665.7	229.5	229.5	...	...	436.2
Woodruff	378.8	63.9	63.9	...	...	314.8
Yell	595.4	402.0	401.5	...	0.5	193.4
All counties	33320.0	17687.3	17246.6	236.4	204.3	15632.7

[1] From U.S. Bureau of the Census.

[2] Forest land (formerly termed commercial forest land) that is producing or capable of producing at least 20 cubic feet of industrial wood per acre per year. Includes areas which may be inaccessible or inoperable by current standards. Excludes reserved timberlands.

[3] Forest land incapable of producing 20 cubic feet of industrial wood per acre per year under natural conditions because of adverse site conditions.

[4] Mississippi included in Crittenden.

[5] Jackson included in Cross.

Table 2–*Area of timberland by county and ownership class, Arkansas, 1988*

County	All ownerships	National forest	Misc. federal	State	County and municipal	Forest industry[1]	Farmer	Corporate[2]	Individual[2]
	- - - - - - - -	- - - - - - - -	- - - - - - - -	- - - - - - - -	*Thousand acres*	- - - - - - - -	- - - - - - - -	- - - - - - - -	- - - - - - - -
Arkansas	190.7	...	46.2	28.9	...	5.8	52.0	17.3	40.5
Ashley	377.4	...	10.9	...	...	273.5	21.9	5.5	65.6
Baxter	209.2	50.7	19.0	6.3	...	...	57.1	...	76.1
Benton	210.7	11.4	11.4	11.4	...	...	62.6	62.6	51.2
Boone	126.7	...	...	...	...	...	57.6	11.5	57.6
Bradley	353.6	...	11.4	...	...	182.5	5.7	34.2	119.8
Calhoun	330.7	...	...	...	...	242.5	16.5	5.5	66.1
Carroll	183.3	...	...	...	...	...	61.1	22.2	100.0
Chicot	83.7	...	...	...	...	11.2	39.1	22.3	11.2
Clark	405.4	...	11.3	...	...	146.4	73.2	22.5	152.0
Clay	78.5	...	...	14.3	...	7.1	35.7	...	21.4
Cleburne	226.5	...	...	...	...	35.2	45.3	10.1	135.9
Cleveland	330.7	...	...	...	...	191.5	5.8	11.6	121.8
Columbia	381.5	...	...	...	...	90.8	12.1	24.2	254.3
Conway	163.9	...	...	7.1	...	14.2	42.7	7.1	92.6
Craighead	49.0	...	...	14.7	...	...	4.9	9.8	19.6
Crawford	211.6	79.4	...	...	...	...	39.7	6.6	86.0
Crittenden[3]	49.0	...	4.9	9.8	4.9	...	24.5	4.9	
Cross[4]	112.4	...	...	...	...	...	46.8	9.4	56.2
Dallas	362.5	...	...	...	...	261.2	5.3	10.7	85.3
Desha	150.8	...	14.4	...	...	64.6	14.4	43.1	14.4
Drew	386.2	...	...	16.1	...	219.9	21.5	21.5	107.3
Faulkner	168.4	...	9.4	4.7	...	...	18.7	51.5	84.2
Franklin	231.2	85.9	6.6	...	...	...	66.1	6.6	66.1
Fulton	189.9	...	...	...		5.6	106.1	11.2	67.0
Garland	328.9	97.1	5.4	...	5.4	118.6	...	16.2	86.3
Grant	335.9	...	...	...	...	252.0	4.9	...	79.0
Greene	55.7	...	...	...	...	...	11.1	...	44.6
Hempstead	277.4	...	...	...	...	105.4	11.1	16.6	144.2
Hot Spring	276.9	...	...	...	...	163.6	...	6.3	107.0
Howard	250.7	...	5.2	...		161.9	62.7	...	20.9
Independence	187.3	...	...	...	...	28.4	68.1	34.1	56.8
Izard	207.1	...	...	...	...	...	31.4	12.6	163.2
Jefferson	218.8	...	16.0	10.7		48.0	16.0	26.7	101.4
Johnson	285.2	173.2	5.1	...	...	...	20.4	...	86.6
Lafayette	224.4	...	...	...	...	82.7	29.5	...	112.2
Lawrence	84.6	...	...	6.0	...	...	30.2	...	48.4
Lee	98.4	16.4	...	...	...	8.2	24.6	...	49.2
Lincoln	153.2	...	...	6.7	...	33.3	20.0	26.6	66.6
Little River	166.9	...	...	...	...	73.0	52.1	5.2	36.5
Logan	242.1	90.8	24.2	...	...	12.1	24.2	6.1	84.7
Lonoke	75.8	...	...	5.1	...	...	50.6	10.1	10.1
Madison	376.2	37.0	...	6.2	...	...	154.2	6.2	172.7
Marion	196.5	...	...	...	...	...	95.3	6.0	95.3
Miller	170.1	...	...	17.0	...	28.4	39.7	5.7	79.4
Monroe	140.4	...	20.1	5.0	...	50.1	40.1	5.0	20.1
Montgomery	413.4	307.1	5.9	...	...	53.2	11.8	5.9	29.5
Nevada	306.0	...	...	17.3	...	127.0	34.6	5.8	121.3
Newton	377.3	152.0	...	5.6	...	...	61.9	5.6	152.0
Ouachita	392.9	...	6.0	6.0	12.1	114.9	30.2	36.3	187.4
Perry	260.8	70.6	...	5.4	...	135.8	21.7	5.4	21.7
Phillips	94.4	7.3	7.3	...	...	7.3	14.5	...	58.1
Pike	303.9	...	...	...	...	233.8	52.6	...	17.5
Poinsett	54.9	...	...	13.7	...	...	18.3	...	22.9
Polk	381.6	158.1	...	5.5	16.4	81.8	27.3	5.5	87.2
Pope	353.7	202.1	...	5.6	...	11.2	44.9	5.6	84.2
Prairie	77.6	...	5.2	20.7	...	5.2	25.9	10.4	10.4
Pulaski	201.8	...	25.9	...	...	41.4	25.9	51.7	56.9
Randolph	176.6	...	...	7.1	...	7.1	49.4	7.1	106.0
St. Francis	67.1	...	...	12.2	...	...	36.6	6.1	12.2
Saline	349.7	27.8	...	...	5.6	172.1	16.7	27.8	99.9
Scott	442.7	356.4	...	...	...	5.7	5.7	11.5	63.2
Searcy	285.5	40.8	...	5.8	...	...	116.5	5.8	116.5
Sebastian	149.6	...	45.5	...	6.5	...	32.5	6.5	58.5

Table 2–*Area of timberland by county and ownership class, Arkansas, 1988 - Continued*

County	All ownerships	National forest	Misc. federal	State	County and municipal	Forest industry[1]	Farmer	Corporate[2]	Individual[2]
	Thousand acres								
Sevier	227.9	...	9.7	...	...	111.5	33.9	14.5	58.2
Sharp	219.3	..	5.6	16.9	...	...	45.0	16.9	135.0
Stone	309.0	68.7	...	...	...	22.9	62.9	11.4	143.1
Union	584.9	.	37.6	..	5.4	198.5	53.7	59.0	230.7
Van Buren	345.9	33.5	.	5.6	...	44.6	139.5	5.6	117.2
Washington	259.0	29.9			...	...	69.7	14.9	144.5
White	229.5		...	32.8	...	6.6	72.1	6.6	111.4
Woodruff	63.9			.	...	...	49.2	...	14.8
Yell	401.5	200.8	11.2	11.2	...	78.1	50.2	...	50.2
All counties	17246.6	2296.8	381.3	341.3	56.2	4376.3	2926.0	941.0	5927.7

[1] Includes land leased to forest industry.
[2] Indian land will be classed as corporate or individual as defined by the Bureau of Indian Affairs.
[3] Mississippi included in Crittenden.
[4] Jackson included in Cross.

Table 3–*Area of timberland by county and forest type group, Arkansas, 1988*

County	Total	Forest type group						
		Loblolly-shortleaf pine						
		Planted	Natural	Oak-pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood	Nontyped[1]
	Thousand acres							
Arkansas	190.7		..	...	40.5	138.7	11.6	...
Ashley	377.4	..	213.3	65.6	43.8	54.7	...	...
Baxter	209.2	6.3	6.3	31.7	164.8	...	...	...
Benton	210.7		5.7	5.7	193.6	...	5.7	..
Boone	126.7		..	11.5	115.2	...	...	..
Bradley	353.6	11.4	102.6	96.9	68.4	74.1	...	...
Calhoun	330.7	38.6	110.2	55.1	38.6	88.2	...	...
Carroll	183.3		..	27.8	155.6	...	...	..
Chicot	83.7	.	...	...	...	55.8	27.9	..
Clark	405.4	56.3	95.7	90.1	112.6	50.7	...	...
Clay	78.5		.	...	21.4	57.1	...	...
Cleburne	226.5	10.1	35.2	55.4	120.8	5.0	...	...
Cleveland	330.7	17.4	104.4	75.4	75.4	58.0	...	..
Columbia	381.5	24.2	127.2	84.8	84.8	60.6		..
Conway	163.9		21.4	42.7	78.4	21.4	...	..
Craighead	49.0			...	14.7	24.5	9.8	...
Crawford	211.6	6.6	6.6	59.5	132.3	6.6	...	.
Crittenden[3]	49.0			...	...	29.4	19.6	.
Cross[4]	112.4			...	56.2	56.2	...	...
Dallas	362.5	42.6	117.3	85.3	85.3	26.7	...	5.3
Desha	150.8			...	...	129.3	21.5	..
Drew	386.2	42.9	91.2	75.1	112.6	64.4	...	..
Faulkner	168.4	9.4	...	18.7	116.9	23.4	...	...
Franklin	231.2	.	33.0	33.0	158.6	6.6	...	...
Fulton	189.9	5.6	5.6	11.2	167.6	...	...	...
Garland	328.9	70.1	64.7	43.1	151.0	...	...	...
Grant	335.9	69.2	54.3	64.2	84.0	64.2	...	...
Greene	55.7	..	...	5.6	44.6	5.6	...	...
Hempstead	277.4	66.6	27.7	77.7	66.6	38.8	...	...
Hot Spring	276.9	50.3	31.5	81.8	75.5	37.8	...	...
Howard	250.7	78.3	26.1	67.9	52.2	26.1	...	...
Independence	187.3		22.7	28.4	130.6	5.7	...	...
Izard	207.1		31.4	50.2	119.2	6.3	...	...
Jefferson	218.8	10.7	37.4	21.3	53.4	90.7	5.3	...
Johnson	285.2	15.3	40.7	45.8	183.3	...	...	...
Lafayette	224.4	17.7	76.8	35.4	47.2	47.2	...	...
Lawrence	84.6		..	.	54.4	30.2	...	...

Table 3–*Area of timberland by county and forest type group, Arkansas, 1988 - Continued*

County	Total	Forest type group						
		Loblolly-shortleaf pine						
		Planted	Natural	Oak-pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood	Nontyped[1]
	Thousand acres							
Lee	98.4	...	...	...	16.4	73.8	8.2	...
Lincoln	153.2	13.3	20.0	13.3	59.9	40.0	6.7	...
Little River	166.9	36.5	36.5	26.1	41.7	20.9	5.2	...
Logan	242.1	...	60.5	90.8	84.7	6.1	...	...
Lonoke	75.8	5.1	...	...	15.2	50.6	5.1	...
Madison	376.2	...	6.2	30.8	339.2	...	...	...
Marion	196.5	...	11.9	6.0	172.6	6.0	...	...
Miller	170.1	11.3	39.7	22.7	62.4	34.0	...	...
Monroe	140.4	...	...	5.0	20.1	110.3	5.0	...
Montgomery	413.4	11.8	135.8	106.3	159.5	...	...	...
Nevada	306.0	28.9	86.6	63.5	75.1	52.0	...	...
Newton	377.3	...	16.9	33.8	326.6	...	...	...
Ouachita	392.9	36.3	133.0	66.5	60.4	96.7	...	...
Perry	260.8	27.2	92.4	76.1	54.3	10.9	...	...
Phillips	94.4	...	...	...	21.8	72.6	...	...
Pike	303.9	105.2	81.8	87.7	29.2	...	...	...
Poinsett	54.9	...	...	...	13.7	32.0	9.1	...
Polk	381.6	32.7	43.6	141.7	163.6	...	...	...
Pope	353.7	5.6	61.8	67.4	207.7	11.2	...	...
Prairie	77.6	...	...	...	15.5	62.1	...	...
Pulaski	201.8	5.2	25.9	51.7	88.0	25.9	5.2	...
Randolph	176.6	...	7.1	7.1	134.2	28.3	...	...
St. Francis	67.1	...	...	...	24.4	42.7	...	...
Saline	349.7	44.4	66.6	94.4	105.5	38.9	...	...
Scott	442.7	23.0	189.7	92.0	138.0	...	...	...
Searcy	285.5	...	5.8	17.5	256.4	5.8	...	...
Sebastian	149.6	...	6.5	19.5	91.1	19.5	13.0	...
Sevier	227.9	29.1	33.9	33.9	87.3	43.6	...	...
Sharp	219.3	...	11.2	28.1	174.3	5.6	...	...
Stone	309.0	5.7	17.2	62.9	223.2	...	...	...
Union	584.9	64.4	144.9	144.9	123.4	107.3	...	...
Van Buren	345.9	22.3	44.6	61.4	217.6	...	...	...
Washington	259.0	...	5.0	14.9	239.1	...	...	...
White	229.5	...	19.7	19.7	124.6	65.6	...	...
Woodruff	63.9	...	...	...	...	63.9	...	...
Yell	401.5	27.9	106.0	117.1	78.1	72.5	...	...
All counties	17246.6	1185.5	2999.9	3049.9	7264.6	2582.5	158.9	5.3

[1] Timberland with no current stocking.
[2] Mississippi included in Crittenden.
[3] Jackson included in Cross.

Table 4–*Area of timberland by county and stand-size class, Arkansas, 1988*

County	All classes	Stand-size class			
		Sawtimber	Poletimber	Sapling-seedling	Nonstocked[1] areas
	Thousand acres				
Arkansas	190.7	167.6	11.6	5.8	5.8
Ashley	377.4	235.2	71.1	71.1	...
Baxter	209.2	76.1	95.1	38.0	...
Benton	210.7	79.7	79.7	51.2	...
Boone	126.7	57.6	34.6	34.6	...
Bradley	353.6	256.6	57.0	34.2	5.7
Calhoun	330.7	176.4	66.1	88.2	...
Carroll	183.3	77.8	72.2	33.3	...
Chicot	83.7	44.7	16.7	16.7	5.6
Clark	405.4	185.8	112.6	101.3	5.6
Clay	78.5	42.8	21.4	14.3	...

Table 4–*Area of timberland by county and stand-size class, Arkansas, 1988 - Continued*

County	All classes	Stand-size class: Sawtimber	Poletimber	Sapling-seedling	Nonstocked[1] areas
	- - - - - - - - -	- - - - - - - - - *Thousand acres*	- - - - - - - - -	- - - - - - - - -	- - - - - - - - -
Cleburne	226.5	60.4	105.7	60.4	...
Cleveland	330.7	237.9	52.2	40.6	...
Columbia	381.5	218.0	84.8	78.7	...
Conway	163.9	42.7	71.2	49.9	...
Craighead	49.0	34.3	4.9	9.8	...
Crawford	211.6	92.6	112.4	6.6	...
Crittenden[2]	49.0	19.6	19.6	4.9	4.9
Cross[3]	112.4	37.5	65.5	9.4	...
Dallas	362.5	186.6	69.3	95.9	10.7
Desha	150.8	122.1	28.7	...	...
Drew	386.2	209.2	69.7	101.9	5.4
Faulkner	168.4	18.7	84.2	65.5	...
Franklin	231.2	66.1	105.7	39.6	19.8
Fulton	189.9	16.8	95.0	72.6	5.6
Garland	328.9	118.6	97.1	113.2	...
Grant	335.9	138.3	108.7	84.0	4.9
Greene	55.7	39.0	16.7	...	...
Hempstead	277.4	127.6	94.3	55.5	...
Hot Spring	276.9	81.8	75.5	119.6	
Howard	250.7	47.0	83.6	120.1	...
Independence	187.3	90.8	62.4	34.1	
Izard	207.1	56.5	100.4	50.2	...
Jefferson	218.8	106.7	64.0	48.0	
Johnson	285.2	112.0	137.5	35.7	
Lafayette	224.4	100.4	82.7	41.3	
Lawrence	84.6	36.3	24.2	24.2	
Lee	98.4	82.0	8.2	8.2	...
Lincoln	153.2	86.6	46.6	20.0	...
Little River	166.9	78.2	52.1	31.3	5.2
Logan	242.1	84.7	72.6	78.7	6.1
Lonoke	75.8	35.4	15.2	25.3	...
Madison	376.2	123.3	154.2	92.5	6.2
Marion	196.5	59.5	71.4	59.5	6.0
Miller	170.1	73.7	73.7	22.7	...
Monroe	140.4	105.3	20.1	15.0	...
Montgomery	413.4	194.9	135.8	82.7	...
Nevada	306.0	207.9	46.2	46.2	5.8
Newton	377.3	123.9	208.3	39.4	5.6
Ouachita	392.9	229.7	66.5	90.7	6.0
Perry	260.8	103.2	81.5	76.1	...
Phillips	94.4	65.4	14.5	14.5	...
Pike	303.9	105.2	52.6	146.1	...
Poinsett	54.9	41.1	4.6	4.6	4.6
Polk	381.6	109.0	163.6	109.0	...
Pope	353.7	129.1	179.7	39.3	5.6
Prairie	77.6	62.1	15.5	...	...
Pulaski	201.8	82.8	82.8	36.2	...
Randolph	176.6	49.4	63.6	63.6	...
St. Francis	67.1	18.3	24.4	12.2	12.2
Saline	349.7	116.6	105.5	122.1	5.6
Scott	442.7	224.2	149.5	69.0	...
Searcy	285.5	75.7	163.2	40.8	5.8
Sebastian	149.6	26.0	52.0	71.5	...
Sevier	227.9	97.0	63.0	67.9	...
Sharp	219.3	22.5	112.5	73.1	11.2
Stone	309.0	85.8	177.4	45.8	...
Union	584.9	338.1	91.2	144.9	10.7
Van Buren	345.9	61.4	228.7	55.8	...
Washington	259.0	54.8	174.3	19.9	10.0
White	229.5	72.1	85.2	72.1	...
Woodruff	63.9	34.4	19.7	4.9	4.9
Yell	401.5	172.9	139.4	78.1	11.2
All counties	17246.6	7450.1	5769.7	3830.2	196.6

[1] Timberland less than 16.7 percent stocked.
[2] Mississippi included in Crittenden.
[3] Jackson included in Cross.

Table 5—*Area of timberland by county and site class, Arkansas, 1988*

County	All classes	Site class (cubic feet/acre/year)				
		>165	120-165	85-120	50-85	<50
	Thousand acres					
Arkansas	190.7	11.6	34.7	98.3	34.7	11.6
Ashley	377.4	16.4	114.9	191.4	49.2	5.5
Baxter	209.2	...	6.3	...	95.1	107.8
Benton	210.7	...	11.4	5.7	136.6	56.9
Boone	126.7	...	...	...	69.1	57.6
Bradley	353.6	11.4	74.1	205.3	62.7	...
Calhoun	330.7	5.5	60.6	181.9	82.7	...
Carroll	183.3	...	...	5.6	88.9	88.9
Chicot	83.7	5.6	22.3	16.7	22.3	16.7
Clark	405.4	22.5	101.3	208.3	73.2	...
Clay	78.5	28.5	7.1	21.4	14.3	7.1
Cleburne	226.5	...	5.0	20.1	166.1	35.2
Cleveland	330.7	11.6	81.2	226.3	11.6	...
Columbia	381.5	48.4	78.7	181.7	72.7	...
Conway	163.9	...	7.1	42.7	85.5	28.5
Craighead	49.0	...	9.8	9.8	24.5	4.9
Crawford	211.6	...	...	13.2	125.7	72.7
Crittenden[1]	49.0	14.7	4.9	4.9	19.6	4.9
Cross[2]	112.4	...	18.7	18.7	37.5	37.5
Dallas	362.5	...	95.9	191.9	74.6	...
Desha	150.8	35.9	28.7	64.6	21.5	...
Drew	386.2	32.2	80.5	219.9	53.6	...
Faulkner	168.4	...	18.7	14.0	70.2	65.5
Franklin	231.2	...	13.2	26.4	132.1	59.5
Fulton	189.9	...		11.2	72.6	106.1
Garland	328.9	5.4	...	59.3	237.2	27.0
Grant	335.9	9.9	79.0	197.6	49.4	...
Greene	55.7	...	5.6	5.6	33.4	11.1
Hempstead	277.4	5.5	83.2	138.7	49.9	...
Hot Spring	276.9	6.3	31.5	88.1	81.8	69.2
Howard	250.7	...	20.9	151.5	78.3	...
Independence	187.3	...	...	5.7	130.6	51.1
Izard	207.1	...	...	43.9	100.4	62.8
Jefferson	218.8	10.7	16.0	112.1	74.7	5.3
Johnson	285.2	...		35.7	173.2	76.4
Lafayette	224.4	...	23.6	118.1	65.0	17.7
Lawrence	84.6	...	12.1	6.0	48.4	18.1
Lee	98.4	...	49.2	24.6	16.4	8.2
Lincoln	153.2	6.7	33.3	59.9	53.3	...
Little River	166.9	5.2	41.7	83.4	31.3	5.2
Logan	242.1	...	6.1	6.1	115.0	115.0
Lonoke	75.8	15.2	5.1	20.2	30.3	5.1
Madison	376.2	...	...	6.2	197.3	172.7
Marion	196.5	...	...	...	95.3	101.2
Miller	170.1	...	45.4	79.4	39.7	5.7
Monroe	140.4	10.0	20.1	55.1	50.1	5.0
Montgomery	413.4	...	17.7	94.5	242.2	59.1
Nevada	306.0	23.1	98.2	138.6	46.2	...
Newton	377.3	...	...	5.6	191.5	180.2
Ouachita	392.9	30.2	126.9	187.4	42.3	6.0
Perry	260.8	...	...	27.2	206.5	27.2
Phillips	94.4	14.5	21.8	21.8	36.3	...
Pike	303.9	...	52.6	122.7	128.6	...
Poinsett	54.9	...	13.7	27.4	9.1	4.6
Polk	381.6	...	...	109.0	223.5	49.1
Pope	353.7	...	16.8	73.0	202.1	61.8
Prairie	77.6	10.4	10.4	15.5	41.4	...
Pulaski	201.8	...	5.2	46.6	113.8	36.2
Randolph	176.6	7.1	7.1	14.1	63.6	84.8
St. Francis	67.1	12.2	6.1	24.4	24.4	...
Saline	349.7	5.6	16.7	99.9	183.2	44.4
Scott	442.7	5.7	11.5	86.2	270.2	69.0
Searcy	285.5	...	...	17.5	163.2	104.9
Sebastian	149.6	...	...	6.5	65.0	78.0

Table 5–*Area of timberland by county and site class, Arkansas, 1988 - Continued*

County	All classes	Site class (cubic feet/acre/year) > 165	120-165	85-120	50-85	< 50
	- - - - - -	- - - - - -	*Thousand acres*	- - - - - -	- - - - - -	- - - - - -
Sevier	227.9	33.9	67.9	67.9	53.3	4.8
Sharp	219.3	...	...	16.9	95.6	106.9
Stone	309.0	...	...	17.2	228.9	62.9
Union	584.9	48.3	193.2	284.4	59.0	...
Van Buren	345.9	...	...	22.3	223.1	100.4
Washington	259.0	...	...	...	124.5	134.5
White	229.5	...	26.2	52.4	98.3	52.4
Woodruff	63.9	4.9	...	24.6	29.5	4.9
Yell	401.5	11.2	16.7	66.9	251.0	55.8
All counties	17246.6	526.3	2056.7	4947.9	6864.1	2851.6

[1] Mississippi included in Crittenden.

[2] Jackson included in Cross.

Table 6–*Area of timberland by county and stocking classes of growing-stock trees, Arkansas, 1988*

County	All classes	Stocking class (percent) > 130	100-130	60-100	16.7-60	< 16.7
	- - - - - -	- - - - - -	*Thousand acres*	- - - - - -	- - - - - -	- - - - - -
Arkansas	190.7	...	23.1	115.6	46.2	5.8
Ashley	377.4	10.9	54.7	235.2	76.6	...
Baxter	209.2	6.3	12.7	126.8	63.4	...
Benton	210.7	...	17.1	113.9	79.7	...
Boone	126.7	...	...	74.9	51.8	...
Bradley	353.6	...	57.0	199.6	91.2	5.7
Calhoun	330.7	22.0	110.2	148.8	49.6	...
Carroll	183.3	...	11.1	77.8	94.5	...
Chicot	83.7	...	5.6	33.5	39.1	5.6
Clark	405.4	22.5	123.9	168.9	84.5	5.6
Clay	78.5	...	21.4	42.8	14.3	...
Cleburne	226.5	10.1	45.3	135.9	35.2	...
Cleveland	330.7	11.6	69.6	191.5	58.0	...
Columbia	381.5	24.2	115.1	181.7	60.6	...
Conway	163.9	...	35.6	64.1	64.1	...
Craighead	49.0	...	4.9	19.6	24.5	...
Crawford	211.6	...	13.2	132.3	66.1	...
Crittenden[1]	49.0	...	19.6	14.7	9.8	4.9
Cross[2]	112.4	...	...	65.5	46.8	...
Dallas	362.5	...	111.9	197.2	42.6	10.7
Desha	150.8	...	28.7	71.8	50.3	...
Drew	386.2	...	96.5	166.3	118.0	5.4
Faulkner	168.4	...	18.7	88.9	60.8	...
Franklin	231.2	...	13.2	151.9	46.2	19.8
Fulton	189.9	5.6	11.2	83.8	83.8	5.6
Garland	328.9	16.2	75.5	172.5	64.7	...
Grant	335.9	39.5	69.2	153.1	69.2	4.9
Greene	55.7	...	5.6	27.9	22.3	...
Hempstead	277.4	22.2	44.4	160.9	49.9	...
Hot Spring	276.9	6.3	62.9	163.6	44.1	...
Howard	250.7	5.2	57.4	135.8	52.2	...
Independence	187.3	...	5.7	141.9	39.7	...
Izard	207.1	12.6	6.3	144.3	43.9	..
Jefferson	218.8	21.3	69.4	69.4	58.7	...
Johnson	285.2	5.1	45.8	183.3	50.9	...
Lafayette	224.4	5.9	94.5	94.5	29.5	...
Lawrence	84.6	...	..	60.4	24.2	...

Table 6–*Area of timberland by county and stocking classes of growing-stock trees, Arkansas, 1988 - Continued*

County	All classes	Stocking class (percent) > 130	100-130	60-100	16.7-60	< 16.7
	Thousand acres					
Lee	98.4	...	8.2	73.8	16.4	...
Lincoln	153.2	...	6.7	99.9	46.6	...
Little River	166.9	10.4	10.4	93.9	46.9	5.2
Logan	242.1	...	30.3	127.1	78.7	6.1
Lonoke	75.8	5.1	10.1	40.4	20.2	...
Madison	376.2	...	24.7	234.3	111.0	6.2
Marion	196.5	...	17.9	101.2	71.4	6.0
Miller	170.1	...	22.7	113.4	34.0	...
Monroe	140.4	5.0	15.0	70.2	50.1	...
Montgomery	413.4	11.8	124.0	200.8	76.8	...
Nevada	306.0	11.5	86.6	144.4	57.7	5.8
Newton	377.3	...	50.7	202.7	118.3	5.6
Ouachita	392.9	6.0	114.9	223.7	42.3	6.0
Perry	260.8	16.3	48.9	168.5	27.2	...
Phillips	94.4	...	7.3	58.1	29.1	...
Pike	303.9	11.7	46.8	192.9	52.6	...
Poinsett	54.9	...	13.7	32.0	4.6	4.6
Polk	381.6	10.9	76.3	196.3	98.1	...
Pope	353.7	11.2	44.9	230.2	61.8	5.6
Prairie	77.6	...	10.4	51.8	15.5	...
Pulaski	201.8	...	15.5	93.1	93.1	...
Randolph	176.6	...	...	77.7	98.9	...
St. Francis	67.1	...	6.1	36.6	12.2	12.2
Saline	349.7	16.7	94.4	172.1	61.1	5.6
Scott	442.7	11.5	132.2	247.2	51.7	...
Searcy	285.5	...	17.5	151.5	110.7	5.8
Sebastian	149.6	...	13.0	65.0	71.5	...
Sevier	227.9	4.8	33.9	121.2	67.9	...
Sharp	219.3	...	16.9	101.2	90.0	11.2
Stone	309.0	...	40.1	188.8	80.1	...
Union	584.9	26.8	193.2	279.0	75.1	10.7
Van Buren	345.9	...	16.7	251.0	78.1	...
Washington	259.0	...	14.9	114.6	119.5	10.0
White	229.5	13.1	13.1	157.3	45.9	...
Woodruff	63.9	...	14.8	29.5	14.8	4.9
Yell	401.5	5.6	61.3	217.5	106.0	11.2
All counties	17246.6	426.2	3011.0	9369.7	4243.2	196.6

[1] Mississippi included in Crittenden.
[2] Jackson included in Cross.

Table 7–*Area of timberland by forest type and ownership class, Arkansas, 1988*

Forest type[1]	All ownerships	National forest	Other public	Forest industry	Forest industry-leased	Other private
	Thousand acres					
Loblolly-shortleaf pine	4185.4	702.6	72.2	1953.1	6.1	1451.3
Softwood total	4185.4	702.6	72.2	1953.1	6.1	1451.3
Oak-pine	3049.9	439.4	68.5	955.4	...	1586.6
Oak-hickory	7264.6	1138.0	206.3	794.6	...	5125.7
Oak-gum-cypress	2582.5	16.7	403.5	640.4	6.1	1515.8
Elm-ash-cottonwood	158.9	...	28.2	15.4	...	115.4
Hardwood total	13055.9	1594.2	706.5	2405.8	6.1	8343.4
Nontyped[2]	5.3	...	...	5.3	...	...
All types	17246.6	2296.8	778.7	4364.2	12.1	9794.7

[1] Forest type is based on species plurality of all live trees. Mixed types that in combination contain a majority of hardwood stocking are hardwood types.
[2] Timberland with no current stocking.

Table 8–*Area of timberland by ownership and stocking classes of growing-stock trees, Arkansas, 1988*

Ownership class	All classes	> 130	100-130	60-100	16.7-60	< 16.7
		Stocking class (percent)				
	Thousand acres					
National forest	2296.8	72.3	475.4	1383.1	366.0	...
Other public	778.7	...	132.5	419.1	220.5	6.6
Forest industry	4364.2	188.0	1055.9	2234.0	854.1	32.3
Forest industry-leased	12.1	..	...	12.1	...	...
Other private	9794.7	165.8	1347.2	5321.5	2802.5	157.7
All ownerships	17246.6	426.2	3011.0	9369.7	4243.2	196.6

Table 9–*Area of timberland by forest type and stand-size class, Arkansas, 1988*

Forest type[1]	All classes	Sawtimber	Poletimber	Sapling-seedling	Nonstocked[2] areas
		Stand-size class			
	Thousand acres				
Loblolly-shortleaf pine	4185.4	2220.9	967.0	997.4	...
Softwood total	4185.4	2220.9	967.0	997.4	...
Oak-pine	3049.9	1250.9	922.5	870.8	5.7
Oak-hickory	7264.6	2196.5	3287.7	1688.5	92.0
Oak-gum-cypress	2582.5	1704.6	552.9	241.0	84.1
Elm-ash-cottonwood	158.9	77.3	39.5	32.6	9.5
Hardwood total	13055.9	5229.2	4802.7	2832.8	191.3
Nontyped[3]	5.3		...	..	5.3
All types	17246.6	7450.1	5769.7	3830.2	196.6

[1] Forest type is based on species plurality of all live trees. Mixed types that in combination contain a majority of hardwood stocking are hardwood types

[2] Timberland less than 16.7 percent stocked

[3] Timberland with no current stocking.

Table 10—*Number of live trees on timberland by species and diameter class, Arkansas, 1988*

Species	All classes	Diameter class (inches at breast height) 1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Shortleaf-loblolly pine	1994229	865233	469536	243709	164725	98004	68158	42807	21288	11037	5449	4189	95
Cypress	14469	4061	1585	1749	1432	1285	1149	991	629	501	255	558	273
Other softwoods	334925	211955	75633	26423	13868	4141	1837	748	213	81	12	15	...
Total softwoods	2343623	1081249	546753	271882	180025	103430	71144	44546	22130	11619	5715	4762	368
Select white oaks	695708	315680	155796	88357	58489	33699	17411	12168	6191	3552	2217	2034	114
Select red oaks	231160	103124	43794	25209	19458	13488	9733	6007	3872	2512	1609	2159	195
Other white oaks	606949	265629	149396	75670	46612	28677	15713	10489	6319	3462	1866	2812	305
Other red oaks	816264	457106	136932	68605	51347	35107	23690	15906	11208	6688	4138	4886	650
Hickory	1077920	651120	213372	107318	51815	25664	13899	7471	3499	1752	907	976	127
Hard maple	74826	48357	17354	2852	3450	1466	564	367	192	121	57	45	...
Soft maple	517778	399716	78632	21388	9379	3914	2147	1160	776	270	237	131	28
Beech	21847	12689	5108	644	526	544	497	345	290	394	248	477	83
Sweetgum	968294	620836	174415	79311	39909	22829	13093	8338	4624	2535	1219	1050	136
Tupelo-blackgum	462600	335181	69297	24075	12520	7727	4751	3142	2450	1222	732	1201	302
Ash	263995	175030	47780	16813	9752	5883	3221	2175	1455	742	425	638	81
Cottonwood-aspen	9086	3253	2738	403	190	425	350	413	411	261	201	370	70
Basswood	7729	4687	1515	469	232	302	284	121	42	12	21	44	...
Yellow-poplar	401	...	...	142	...	26	27	68	55	29	27	20	8
Black walnut	10860	3998	2573	1514	1186	870	334	119	129	85	19	35	...
Other hardwoods	2009652	1533929	305189	82091	40145	21378	9825	6624	3829	2685	1808	1951	197
Total hardwoods	7775068	4930335	1403891	594861	345008	202001	115539	74914	45343	26320	15733	18828	2296
Noncommercial	984738	779345	140487	41466	13805	5305	2148	1081	619	264	116	102	...
All species	11103429	6790929	2091131	908209	538838	310736	188831	120541	68091	38202	21564	23691	2664

Table 11—*Number of growing-stock trees on timberland by species and diameter class, Arkansas, 1988*

Species	All classes	Diameter class (inches at breast height) 1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Shortleaf-loblolly pine	1588995	581560	379860	221657	158147	95974	67535	42556	21144	10978	5398	4090	95
Cypress	10745	2470	984	1321	1336	736	968	898	585	490	243	495	220
Other softwoods	263132	163689	59054	22939	12160	2938	1471	613	180	69	12	7	...
Total softwoods	1862872	747719	439898	245917	171642	99648	69973	44068	21909	11538	5653	4592	315
Select white oaks	418348	113502	106832	76177	53790	31375	15245	10267	5164	2805	1659	1456	76
Select red oaks	135282	30208	33266	21315	17138	11869	8010	5055	3180	2031	1368	1695	147
Other white oaks	318829	75770	86496	61802	39912	24550	11606	7736	4675	2603	1460	1988	232
Other red oaks	490824	194763	98778	58292	47888	32641	20701	14195	10034	5801	3540	3803	389
Hickory	472004	179443	118697	84258	44268	21732	11238	6249	2979	1473	718	835	114
Hard maple	29710	9826	12434	2400	2802	1326	389	283	126	72	24	28	...
Soft maple	136477	83035	30537	12571	5455	2440	1018	578	412	160	181	72	18
Beech	10831	4552	3328	644	406	461	303	226	177	277	154	276	28
Sweetgum	565042	305934	108727	64343	35851	21723	11953	7880	4207	2333	1078	908	105
Tupelo-blackgum	140764	66539	32099	16384	10099	6302	3304	2026	1663	824	479	817	229
Ash	93078	41573	19652	11976	8290	4619	2378	1809	1097	676	389	559	60
Cottonwood-aspen	7991	2315	2738	325	190	425	350	397	391	261	184	349	66
Basswood	3750	992	1515	366	163	265	262	121	28	12	9	17	...
Yellow-poplar	243	...	...	...	...	26	27	52	55	29	27	20	8
Black walnut	4932	1474	522	940	959	607	197	60	97	61	9	5	...
Other hardwoods	545535	307597	124441	49014	28371	16065	7072	4778	2853	2211	1486	1531	117
Total hardwoods	3373640	1417522	780061	460808	295581	176428	94053	61713	37137	21629	12763	14359	1587
All species	5236512	2165240	1219959	706725	467223	276076	164026	105781	59046	33166	18416	18951	1902

Table 12–*Volume of growing stock on timberland by species and diameter class, Arkansas, 1988*

Species	All classes	Diameter class (inches at breast height) 5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet										
Shortleaf-loblolly pine	7575.0	541.3	994.2	1208.7	1336.3	1239.9	865.2	599.7	369.8	403.4	16.5
Cypress	191.8	2.6	4.9	7.4	15.0	20.2	18.2	22.9	14.5	38.0	48.2
Other softwoods	156.2	48.8	51.0	23.2	17.7	9.5	3.6	1.8	0.5	0.3	...
Total softwoods	7923.0	592.6	1050.0	1239.2	1369.1	1269.5	887.0	624.5	384.7	441.6	64.7
Select white oaks	1745.5	198.4	308.5	316.8	244.4	229.6	154.2	110.1	82.2	94.0	7.3
Select red oaks	908.6	57.4	99.4	119.0	129.6	112.6	95.9	80.8	69.3	126.8	18.0
Other white oaks	1243.9	134.7	189.1	209.4	155.1	144.9	117.3	86.3	59.8	120.3	27.1
Other red oaks	2399.5	137.1	265.6	327.6	331.1	317.4	303.7	231.0	172.9	267.0	46.0
Hickory	1159.8	164.8	199.8	195.3	172.9	140.8	91.7	62.5	39.5	72.2	20.4
Hard maple	53.3	5.8	14.3	13.0	5.2	5.9	4.1	2.3	1.1	1.6	...
Soft maple	143.1	32.6	28.0	23.5	15.4	11.9	10.8	7.0	8.0	4.2	1.8
Beech	65.3	1.7	2.1	5.1	4.6	5.0	5.9	12.5	6.3	18.0	4.1
Sweetgum	1494.7	146.6	213.0	255.6	228.3	213.5	158.7	116.3	67.4	75.2	20.0
Tupelo-blackgum	401.2	35.5	51.2	58.6	51.0	43.8	46.3	29.4	20.4	44.6	20.5
Ash	312.0	28.2	48.1	45.9	35.6	37.2	31.3	25.6	16.6	36.4	7.1
Cottonwood-aspen	107.9	1.1	1.3	5.2	6.7	10.7	14.2	12.6	12.3	32.7	10.9
Basswood	15.6	0.8	0.7	2.2	4.2	2.9	1.1	0.7	0.6	2.5	...
Yellow-poplar	11.4			0.5	0.5	1.6	2.1	1.4	1.4	2.5	1.4
Black walnut	21.7	1.7	4.3	6.2	2.9	1.3	2.7	2.0	0.4	0.2	...
Other hardwoods	984.4	106.3	144.2	153.0	109.5	104.8	87.2	87.7	70.4	108.4	12.9
Total hardwoods	11068.1	1052.7	1569.6	1736.9	1496.9	1383.8	1127.1	868.3	628.6	1006.5	197.7
All species	18991.1	1645.3	2619.7	2976.1	2865.9	2653.3	2014.1	1492.8	1013.3	1448.1	262.4

Table 13–*Volume of growing stock in the saw-log portion of sawtimber[1] trees on timberland by species and diameter class, Arkansas, 1988*

Species	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet								
Shortleaf-loblolly pine	5264.3	989.3	1166.2	1102.3	771.1	536.5	328.9	355.4	14.5
Cypress	164.9	4.9	11.5	17.3	16.0	21.1	13.6	35.4	45.0
Other softwoods	47.6	18.6	15.3	8.4	2.9	1.7	0.5	0.2	...
Total softwoods	5476.8	1012.9	1193.1	1128.0	790.0	559.3	343.0	391.1	59.5
Select white oaks	757.9	...	184.8	191.8	130.2	93.0	71.3	79.9	6.8
Select red oaks	533.5		98.3	94.9	82.5	70.8	61.2	109.6	16.2
Other white oaks	599.5	...	121.0	122.9	100.6	73.7	51.9	104.8	24.6
Other red oaks	1398.9	...	247.5	265.5	262.0	200.8	150.1	231.9	41.2
Hickory	496.7		132.8	117.9	77.6	53.9	34.5	61.8	18.3
Hard maple	16.2	...	4.1	4.5	3.[illegible]	1.9	0.9	1.2	...
Soft maple	47.0	...	11.1	9.4	8.6	6.0	6.9	3.5	1.6
Beech	47.4		3.1	4.0	5.3	10.4	5.3	15.9	3.3
Sweetgum	723.2	...	157.2	175.3	139.0	104.2	60.4	68.0	19.0
Tupelo-blackgum	217.4	...	36.7	36.1	40.7	25.9	18.2	40.1	19.6
Ash	158.9		26.2	29.5	26.8	22.3	14.9	32.9	6.2
Cottonwood-aspen	88.9	...	5.2	8.9	12.2	11.3	11.1	29.9	10.2
Basswood	10.3	...	3.4	2.4	1.1	0.6	0.5	2.3	...
Yellow-poplar	9.9	...	0.4	1.3	1.9	1.2	1.3	2.3	1.4
Black walnut	7.5	...	2.1	1.1	2.0	1.8	0.3	0.2	...
Other hardwoods	486.1	...	80.5	85.0	74.6	77.3	60.6	96.8	11.3
Total hardwoods	5599.3	...	1114.5	1150.6	968.6	755.2	549.5	881.2	179.7
All species	11076.2	1012.9	2307.6	2278.6	1758.6	1314.5	892.5	1272.3	239.2

[1] That part of the bole of sawtimber trees between a 1-foot stump and saw-log top, including the portion of the forks large enough to contain a saw log.

Table 14–*Volume of sawtimber on timberland by species and diameter class, Arkansas, 1988*

		Diameter class (inches at breast height)							
Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Shortleaf-loblolly pine	32512.9	5439.4	6900.9	6868.0	4992.0	3563.4	2210.5	2440.1	98.6
Cypress	907.9	22.2	56.6	85.9	83.4	120.7	78.0	197.9	263.2
Other softwoods	243.8	90.8	78.0	44.8	16.6	9.4	2.9	1.5	...
Total softwoods	33664.6	5552.4	7035.5	6998.7	5092.0	3693.5	2291.3	2639.5	361.8
Select white oaks	4513.6	...	1014.3	1116.1	789.9	584.4	453.2	515.1	40.7
Select red oaks	3211.7	...	543.5	548.7	495.6	442.2	386.0	692.9	102.8
Other white oaks	3540.2	...	642.6	699.3	590.9	447.1	326.5	674.5	159.3
Other red oaks	8248.3	...	1336.8	1493.0	1544.6	1224.6	926.5	1467.4	255.4
Hickory	3006.8	...	736.8	691.2	476.3	342.2	223.9	413.2	123.4
Hard maple	101.5	...	23.0	27.1	23.3	12.7	6.2	9.1	...
Soft maple	271.0	...	63.3	54.2	47.3	36.4	41.8	20.4	7.6
Beech	300.8	...	17.4	23.4	32.3	68.3	34.6	101.7	23.1
Sweetgum	4283.0	...	877.1	1015.2	833.2	637.1	370.0	437.1	113.4
Tupelo-blackgum	1173.1	...	196.3	200.4	229.4	150.6	105.3	208.8	82.3
Ash	882.0	...	139.8	158.2	153.2	130.0	82.7	182.9	35.0
Cottonwood-aspen	539.8	...	30.1	53.3	73.0	69.9	69.6	16.4	57.6
Basswood	62.9	...	19.1	13.7	6.9	3.8	3.1	16.2	...
Yellow-poplar	61.3	...	2.2	8.1	12.0	7.6	7.6	15.2	8.7
Black walnut	43.6	...	11.1	6.4	12.4	10.7	2.2	0.8	...
Other hardwoods	2845.7	...	442.9	484.7	442.8	465.3	360.7	584.7	64.6
Total hardwoods	33085.3	...	6096.2	6593.1	5762.9	4632.9	3400.1	5526.2	1073.9
All species	66749.9	5552.4	13131.6	13591.8	10855.0	8326.4	5691.4	8165.7	1435.7

Table 15–*Volume of growing stock and sawtimber on timberland by county and species group, Arkansas, 1988*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Arkansas	296.8	...	...	13.9	88.8	194.1	1208.0	...	...	64.1	352.3	791.6
Ashley	487.8	...	359.8	3.1	21.5	103.3	2169.7	...	1723.6	13.1	63.4	369.6
Baxter	171.7	12.1	8.9	6.4	10.2	134.0	554.1	38.8	36.7	12.8	23.1	442.6
Benton	182.1	...	1.9	1.2	13.9	165.2	569.4	...	10.8	4.3	33.1	521.2
Boone	93.5	...	0.9	1.4	1.7	89.6	275.1	...	4.3	1.3	1.7	267.9
Bradley	515.1	20.4	250.3	3.8	72.0	168.5	2110.9	87.2	1159.5	19.4	245.5	599.2
Calhoun	410.5	22.1	206.4	13.8	61.5	106.7	1512.0	26.2	873.8	69.0	181.9	361.1
Carroll	122.3	...	9.4	1.5	4.0	107.5	364.8	...	36.9	...	10.2	317.7
Chicot	101.3	...	...	0.4	66.0	34.9	446.3	...	...	1.5	274.7	170.1
Clark	503.2	42.0	242.3	4.1	61.4	153.3	1907.2	120.1	1148.1	15.8	143.8	479.4
Clay	119.2	...	...	0.4	35.9	82.8	466.2	...	...	1.4	133.8	331.0
Cleburne	179.6	12.4	61.3	5.0	20.5	80.4	456.8	50.9	223.8	10.5	53.7	117.9
Cleveland	563.8	28.9	260.5	0.5	114.1	159.7	2264.3	121.3	1203.2	1.6	314.9	623.4
Columbia	544.9	12.4	305.6	1.9	75.3	149.7	2003.5	15.0	1333.9	4.7	190.3	459.5
Conway	116.7	1.2	30.7	8.3	30.6	46.0	325.6	...	94.2	27.2	103.8	100.4
Craighead	54.8	...	0.4	9.0	24.5	21.0	191.1	...	...	36.9	87.2	67.0
Crawford	230.9	4.9	26.7	10.6	38.7	150.0	730.0	...	144.4	22.6	122.6	440.4
Crittenden[3]	73.9	...	...	4.8	51.5	17.6	266.9	...	...	20.5	206.6	39.8
Cross[4]	99.0	...	...	...	15.9	83.1	309.3	...	...	...	40.8	268.5
Dallas	474.6	27.6	263.1	0.4	63.4	120.2	1828.3	74.3	1222.3	...	168.5	363.2
Desha	253.3	...	...	20.6	165.5	67.1	1034.0	...	...	104.7	627.8	301.4
Drew	448.4	54.3	195.2	9.7	69.5	119.7	1808.0	232.6	942.1	31.1	180.8	421.4
Faulkner	96.5	5.0	3.5	3.8	20.6	63.6	240.4	4.6	11.9	4.7	48.1	171.1
Franklin	207.1	6.0	31.9	5.6	33.6	129.9	611.1	15.6	127.0	5.8	91.5	371.1
Fulton	97.5	21.0	0.2	0.9	3.3	72.2	218.0	49.8	...	1.4	6.2	160.6
Garland	288.5	9.8	159.9	0.5	20.7	97.6	872.3	7.0	663.4	0.8	29.7	171.5
Grant	474.3	63.5	152.9	5.9	102.2	149.8	1542.5	86.2	617.2	27.7	295.2	516.3
Greene	67.2	...	9.6	...	11.5	46.1	252.1	...	45.7	...	28.8	177.6
Hempstead	385.4	109.2	112.9	0.6	54.4	108.3	1462.8	527.6	497.3	2.7	123.1	312.1
Hot Spring	229.4	20.8	88.7	...	30.1	89.8	690.0	37.7	367.3	...	44.5	240.5
Howard	206.1	33.6	81.6	0.4	34.0	56.6	672.1	69.1	407.7	...	78.0	117.3
Independence	150.1	...	29.0	3.8	16.9	100.5	439.3	...	78.3	5.2	55.2	300.7
Izard	155.5	...	53.7	5.8	8.2	87.8	391.6	...	156.8	7.3	23.7	203.7
Jefferson	285.1	6.2	82.3	15.6	57.4	123.6	950.6	...	277.9	69.0	209.2	394.6
Johnson	326.9	27.9	68.7	4.9	44.5	180.9	1121.6	151.7	269.9	15.0	156.2	528.8
Lafayette	318.9	18.9	172.0	0.6	47.8	79.7	1096.1	38.3	732.2	3.0	88.7	233.9
Lawrence	53.4	...	...	1.3	7.4	44.7	183.7	...	...	3.2	20.0	160.5
Lee	166.1	...	...	3.1	86.2	76.8	734.8	...	...	15.7	390.7	328.4
Lincoln	172.6	8.4	50.1	2.2	28.6	83.3	644.8	25.6	219.8	10.2	83.0	306.2
Little River	206.2	10.6	108.4	...	23.2	64.0	824.4	5.3	602.8	...	31.5	184.9
Logan	208.1	...	115.8	5.3	16.2	70.9	705.0	...	445.4	7.3	46.6	205.7
Lonoke	73.0	3.5	...	2.2	19.1	48.3	257.3	17.7	...	10.8	54.8	174.0
Madison	310.7	...	10.1	2.5	31.9	266.2	907.8	...	47.9	4.4	109.8	745.7
Marion	118.4	...	7.9	7.0	3.0	100.5	357.3	...	32.5	3.9	11.4	309.4
Miller	180.4	8.4	72.4	6.8	28.3	64.5	589.0	18.7	322.5	24.7	64.1	159.0
Monroe	227.4	...	8.0	25.2	77.2	116.9	885.2	...	30.5	148.7	242.9	463.2
Montgomery	625.8	35.3	398.5	0.3	26.2	165.5	2432.1	102.7	1903.8	...	50.8	374.8
Nevada	432.8	43.1	203.2	1.8	67.3	117.4	1675.1	160.7	931.0	8.4	162.9	412.1
Newton	416.2	...	42.7	7.2	34.9	331.5	1140.9	...	163.9	9.9	127.6	839.4
Ouachita	563.2	19.4	270.6	1.5	109.7	162.0	2198.0	97.0	1286.1	7.2	315.4	492.3
Perry	238.9	3.6	160.2	1.1	15.6	58.4	848.9	...	671.1	0.8	60.1	116.8
Phillips	114.8	...	...	0.7	40.6	73.4	457.2	...	...	3.9	164.7	288.6
Pike	276.1	57.0	152.3	...	13.5	53.3	1119.2	217.5	716.9	...	40.5	144.4
Poinsett	77.1	...	...	2.5	16.8	57.7	325.9	...	...	15.6	71.2	239.1
Polk	359.7	4.1	178.7	2.9	30.7	143.3	1062.3	17.7	734.9	1.5	71.4	236.8
Pope	395.3	2.2	112.3	8.7	38.4	233.6	1254.6	5.7	471.4	15.4	143.2	619.0
Prairie	142.3	...	0.4	8.0	53.8	80.1	528.4	...	2.0	39.2	198.9	288.3
Pulaski	177.6	1.6	65.3	6.8	27.0	76.8	556.9	3.3	276.9	24.7	67.2	184.8
Randolph	96.1	...	...	2.0	15.2	78.9	313.5	...	...	5.2	45.5	262.8
St. Francis	69.0	...	...	0.5	20.1	48.4	249.0	...	...	2.2	58.6	188.1
Saline	336.9	25.9	134.3	0.3	50.7	125.7	1111.8	79.9	553.3	...	136.2	342.4
Scott	629.9	36.1	420.7	7.6	30.1	135.4	2138.4	126.5	1675.3	12.5	81.2	242.8

Table 15–*Volume of growing stock and sawtimber on timberland by county and species group, Arkansas, 1988 - Continued*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Searcy	242.5	...	20.0	2.3	29.9	190.3	641.5	...	84.9	3.4	80.2	473.1
Sebastian	51.4	...	6.7	2.2	10.9	31.7	117.1	...	16.1	7.1	12.9	81.0
Sevier	248.2	2.7	73.3	5.3	63.8	103.0	915.2	1.6	377.4	9.6	197.1	329.4
Sharp	105.2	1.3	3.5	6.5	4.1	89.8	193.6	...	7.1	4.1	3.4	179.1
Stone	277.2	1.7	47.3	8.0	23.6	196.7	768.7	7.6	196.7	9.1	64.9	490.3
Union	852.7	57.2	404.7	6.4	132.6	251.8	3523.0	177.8	2041.0	26.3	348.5	929.4
Van Buren	273.8	1.9	66.0	8.6	20.2	177.2	661.2	...	238.5	8.7	58.0	355.9
Washington	186.2	0.4	7.1	6.2	15.2	157.2	435.6	...	22.8	11.5	26.1	375.3
White	212.6	...	18.2	9.3	58.2	126.9	678.8	..	59.6	34.6	186.2	398.4
Woodruff	88.7	...	...	10.8	25.9	52.0	309.7	...	...	51.8	65.4	192.5
Yell	452.8	6.0	255.7	5.5	65.2	120.5	1642.0	23.0	1128.1	5.0	169.1	316.8
All counties	18991.1	890.4	6684.6	348.0	2952.8	8115.2	66749.9	2842.6	29670.3	1151.7	8900.3	24185.0

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.
[3] Mississippi included in Crittenden.
[4] Jackson included in Cross.

Table 16–*Volume of timber on timberland by class of timber and species group, Arkansas, 1988*

		Softwood			Hardwood	
		Pine				
Class of timber	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet					
Sawtimber trees:						
Saw-log portion	11076.2	470.8	4793.5	212.5	1523.5	4075.9
Upper-stem portion	1913.1	81.7	693.6	28.3	300.4	809.1
Total	12989.2	552.5	5487.1	240.8	1823.8	4885.0
Poletimber trees	6001.9	337.9	1197.6	107.2	1129.0	3230.2
All growing-stock trees	18991.1	890.4	6684.6	348.0	2952.8	8115.2
Rough trees:						
Sawtimber size	728.9	3.5	30.4	21.8	151.4	521.8
Poletimber size	746.0	16.3	72.2	11.7	156.8	489.0
Total	1474.9	19.8	102.6	33.5	308.2	1010.8
Rotten trees:						
Sawtimber size	263.8	0.2	1.1	11.4	71.7	179.4
Poletimber size	22.5	...	...	...	8.3	14.2
Total	286.3	0.2	1.1	11.4	80.0	193.6
Salvable dead trees:						
Sawtimber size	56.4	3.1	13.7	0.7	6.6	32.3
Poletimber size	52.5	3.7	10.7	2.5	4.3	31.3
Total	108.9	6.8	24.5	3.2	10.9	63.5
All classes	20861.3	917.2	6812.9	396.1	3352.0	9383.1

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 17–*Volume of live trees and growing stock on timberland by ownership class and species group, Arkansas, 1988*

	Live trees						Growing stock					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet											
National forest	3470.0	109.1	1527.3	23.8	264.6	1545.1	3204.7	103.4	1503.4	23.1	225.0	1349.9
Other public	1175.1	21.0	141.6	55.2	285.4	671.9	1070.1	20.8	141.3	50.1	250.0	607.9
Forest industry	5169.6	434.3	2345.7	67.2	818.8	1503.7	4850.0	426.1	2308.1	58.6	729.7	1327.4
Forest industry-leased	17.3	...	5.5	1.3	0.6	9.9	15.8	...	5.5	1.3	0.4	8.5
Other private	10920.3	346.1	2768.3	245.4	1971.6	5589.0	9850.5	340.1	2726.4	214.8	1747.6	4821.5
All ownerships	20752.3	910.4	6788.4	392.9	3341.1	9319.6	18991.1	890.4	6684.6	348.0	2952.8	8115.2

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 18–*Average net annual growth of growing stock and sawtimber on timberland by county and species group, Arkansas, 1988*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Arkansas	9.6	...	...	-0.1	3.3	6.3	34.9	...	...	-0.3	11.8	23.5
Ashley	27.5	0.3	21.3	0.1	1.0	4.8	124.1	1.7	100.6	0.7	2.7	18.4
Baxter	7.7	0.1	0.6	0.3	0.6	6.2	31.7	1.2	3.4	0.9	2.1	24.1
Benton	8.6	...	0.1	...	0.7	7.8	30.0	...	0.5	0.2	2.1	27.3
Boone	2.1	...	...	0.1	...	1.9	9.3	...	0.4	0.2	...	8.7
Bradley	28.5	0.7	17.4	0.1	2.8	7.4	132.9	4.7	84.2	0.6	12.9	30.3
Calhoun	26.8	0.7	16.9	0.1	2.7	6.5	97.0	0.8	64.1	...	9.0	22.9
Carroll	5.2	...	...	0.1	0.4	4.8	18.3	...	-1.0	...	0.7	18.7
Chicot	2.3	...	...	...	1.2	1.1	14.1	...	...	0.1	10.0	4.0
Clark	23.0	0.1	15.3	0.1	2.1	5.5	114.2	0.4	74.0	-0.3	9.1	30.9
Clay	3.7	...	...	0.1	0.6	3.0	20.7	...	...	0.2	4.1	16.4
Cleburne	8.4	0.2	3.2	0.2	0.8	4.0	25.1	1.5	14.2	0.4	2.4	6.7
Cleveland	23.9	0.5	14.2	...	3.4	5.7	103.3	3.0	66.8	0.2	9.1	24.3
Columbia	30.0	1.0	19.9	0.1	2.3	6.7	120.2	...	89.0	-0.1	6.8	24.5
Conway	5.9	...	2.0	0.4	1.0	2.5	18.6	...	7.2	1.8	3.7	5.9
Craighead	2.9	...	...	0.3	1.6	0.9	10.7	...	...	1.1	5.8	3.8
Crawford	9.6	...	1.2	0.5	1.8	6.0	35.7	...	6.0	0.7	7.1	21.9
Crittenden[3]	2.8	...	...	0.1	1.5	1.2	10.0	...	...	0.2	6.2	3.7
Cross[4]	2.5	...	...	...	0.6	1.9	12.5	...	...	...	2.9	9.6
Dallas	27.1	1.0	16.0	...	2.9	7.1	112.4	5.2	72.8	...	8.7	25.6
Desha	9.3	...	...	0.3	6.7	2.3	40.8	...	...	0.3	29.7	10.8
Drew	25.3	1.1	15.9	0.1	2.4	5.8	112.2	8.2	77.4	0.1	5.7	20.7
Faulkner	5.7	...	0.9	0.1	1.0	3.6	18.1	...	1.7	0.2	3.9	12.3
Franklin	5.2	0.3	1.5	0.2	0.8	2.4	25.6	1.3	6.4	0.1	3.3	14.4
Fulton	6.4	0.4	1.1	0.1	...	4.8	19.3	4.1	3.2	0.1	0.3	11.7
Garland	9.6	...	5.1	...	0.5	4.1	33.5	0.4	24.7	0.1	0.6	7.7
Grant	23.5	...	15.2	...	1.8	6.5	75.7	-1.0	50.2	0.4	4.8	21.3
Greene	1.5		0.1	...	0.4	0.9	8.4	...	0.8	...	1.5	6.1
Hempstead	14.7	1.4	8.7	...	1.0	3.5	73.6	14.3	40.3	...	2.9	16.2
Hot Spring	10.3	0.7	4.6	...	0.7	4.1	41.1	4.2	17.7	...	3.2	16.0
Howard	12.4	0.6	7.9	-0.1	1.0	3.1	51.1	3.6	36.3	-0.1	3.9	7.4
Independence	6.4		1.1	0.2	0.5	4.5	19.4	...	2.7	0.3	1.8	14.6
Izard	7.6	...	2.0	0.2	0.3	5.1	21.5	...	8.8	0.1	1.2	11.3
Jefferson	13.7	0.2	5.7	0.8	1.3	5.7	43.5	...	19.9	3.6	-0.4	20.3
Johnson	6.9	...	2.7	...	1.4	2.9	29.2	...	9.0	0.1	6.5	13.6
Lafayette	21.4	0.1	14.2	...	1.9	5.1	76.7	1.3	56.4	-0.1	2.8	16.2
Lawrence	1.9	...	...	...	0.4	1.6	10.3	...	...	0.3	1.3	8.7

Table 18–*Average net annual growth of growing stock and sawtimber on timberland by county and species group, Arkansas, 1988–Continued*

County	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Lee	4.2	...	...	0.1	1.7	2.5	26.2	...	...	0.2	11.1	14.9
Lincoln	7.3	0.1	3.5	-0.1	1.0	2.8	32.8	1.0	15.2	-0.2	4.1	12.8
Little River	9.9	...	6.0	...	1.0	2.9	45.3	..	31.8	...	1.9	11.6
Logan	5.7	...	3.8	0.3	0.5	1.0	28.3	...	20.2	0.7	2.8	4.5
Lonoke	3.4	...	...	0.2	0.6	2.5	13.9		..	1.2	2.2	10.4
Madison	11.9	...	0.4	0.2	1.9	9.4	54.8	.	3.7	0.5	7.5	43.1
Marion	9.2	...	0.3	0.5	0.2	8.2	32.3	...	1.4	0.4	1.1	29.3
Miller	11.0	0.1	5.6	..	1.4	3.9	43.0	0.4	26.2	0.3	3.3	12.9
Monroe	4.6	...	0.3	0.1	0.9	3.2	21.1	...	2.2	0.4	3.7	14.9
Montgomery	17.8	0.1	10.7	...	1.1	5.8	97.9	0.6	75.6	..	3.6	18.2
Nevada	18.1	0.9	11.0	0.1	1.2	4.8	91.7	5.5	56.0	0.5	6.5	23.2
Newton	18.2	...	2.3	0.4	1.6	13.9	64.5	...	9.0	0.7	6.8	48.0
Ouachita	26.6	0.6	14.0	..	3.4	8.5	119.0	1.5	71.6	-0.1	13.8	32.2
Perry	8.2	0.2	4.8	0.1	0.8	2.3	39.8	2.0	28.5	0.1	3.2	5.9
Phillips	2.4	...	.	...	1.2	1.2	15.4	..	.		7.1	8.3
Pike	14.5	1.6	10.9	..	0.5	1.5	70.4	12.4	51.3		1.8	4.9
Poinsett	2.7	.	..	0.2	0.4	2.2	17.8		.	0.9	2.9	14.0
Pope	9.2		3.0	0.5	0.4	5.4	38.6	0.5	15.1	1.3	0.1	21.6
Prairie	5.5	.	..	0.3	2.9	2.3	20.4		0.2	0.9	10.6	8.6
Pulaski	8.3		3.0	.	1.8	3.5	32.7		16.0	..	5.4	11.4
Randolph	2.8		.		0.5	2.2	18.4			0.1	3.0	15.3
St. Francis	3.0	..	.	...	0.7	2.3	10.3		..		1.6	8.7
Saline	13.5	0.6	5.5	..	1.2	6.2	56.1	2.2	30.1	..	4.1	19.6
Scott	19.2	0.2	14.2	0.6	1.1	3.1	81.9	1.2	70.5	1.1	3.4	5.8
Searcy	12.8		0.4	0.1	1.8	10.6	40.9		2.1	..	5.9	32.9
Sebastian	0.4	..	0.3	0.1	-0.1	0.2	5.0	..	1.8	0.3	0.3	2.7
Sevier	11.0	..	3.8	0.3	1.6	5.3	44.7	0.1	18.9	0.4	5.1	20.2
Sharp	4.9	0.3	0.1	0.3	0.2	4.1	10.9	0.3	0.5	0.4	0.2	9.5
Stone	9.9	..	1.5	0.4	1.1	7.0	40.1	..	7.1	0.8	3.0	29.1
Union	38.8	0.7	23.3	0.2	3.2	11.4	185.6	4.6	122.3	1.1	10.4	47.2
Van Buren	11.3	..	3.5	0.3	0.8	6.7	40.4	0.1	14.5	0.1	3.4	22.3
Washington	6.2	...	0.4	0.3	0.6	4.9	21.3	..	0.9	0.4	1.4	18.6
White	11.8	0.2	1.0	0.2	3.5	6.9	40.2	1.6	3.5	0.5	12.2	22.4
Woodruff	3.5	.	..	...	1.4	2.1	17.5	.	...	0.4	4.6	12.5
Yell	13.3	...	8.0	0.2	1.9	3.4	67.8		47.7	0.3	5.2	14.6
All counties	813.4	15.2	362.2	10.4	99.0	326.6	3408.5	90.1	1709.9	25.7	357.3	1225.5

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.
[3] Mississippi included in Crittenden.
[4] Jackson included in Cross.

Table 19–*Average net annual removals of growing stock and sawtimber on timberland by county and species group, Arkansas, 1988*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Arkansas	0.8	...	...	0.1	0.3	0.4	4.9	...	...	0.7	2.1	2.1
Ashley	25.9	0.5	18.9	...	1.9	4.7	116.4	1.3	98.1	...	2.4	14.7
Baxter	0.1	...	...	...	...	0.1	0.5	...	...	...	...	0.5
Benton	1.1	...	...	...	...	1.1	4.2	...	...	...	...	4.2
Boone	1.0	...	...	0.1	0.2	0.7	3.1	...	...	0.2	0.6	2.3
Bradley	21.9	2.9	15.5	...	1.0	2.6	100.4	7.9	79.3	...	2.4	10.8
Calhoun	15.9	0.6	11.5	...	0.5	3.2	54.0	0.4	43.5	...	1.3	8.8
Carroll	1.8	...	0.3	...	...	1.4	5.2	...	...	...	0.1	5.1
Chicot	2.4	...	...	...	1.1	1.3	9.1	...	...	...	3.6	5.5
Clark	32.8	...	19.5	0.1	2.8	10.5	128.5	...	85.7	0.3	9.7	32.8
Clay	...	...	...	...	...	...	...	...	...	...	...	...
Cleburne	3.8	...	1.9	...	0.1	1.8	10.9	...	7.2	...	0.2	3.5
Cleveland	19.5	0.6	12.1	...	1.7	5.0	79.2	0.2	53.3	...	5.7	20.0
Columbia	21.8	1.5	16.6	...	0.8	2.9	77.2	...	66.2	...	2.2	8.8
Conway	1.6	...	...	0.2	0.7	0.7	2.8	...	...	...	2.6	0.1
Craighead	0.6	...	...	...	...	0.6	0.6	...	...	...	...	0.6
Crawford	2.5	...	0.9	0.3	0.4	0.8	5.8	...	4.4	...	0.8	0.5
Crittenden[3]	1.2	...	...	0.1	1.0	0.2	6.0	...	...	0.4	5.2	0.4
Cross[4]	1.6	...	...	...	...	1.6	7.8	...	...	...	...	7.8
Dallas	19.2	0.8	12.1	...	1.2	5.0	79.5	2.7	60.2	...	1.4	15.1
Desha	2.1	...	...	0.5	0.9	0.8	10.5	...	...	3.0	4.0	3.6
Drew	30.1	2.0	17.4	0.5	2.0	8.2	128.4	5.2	90.2	1.6	4.6	26.8
Faulkner	1.7	...	0.5	...	0.6	0.6	7.0	...	1.8	...	2.7	2.5
Franklin	2.5	0.4	0.6	...	0.1	1.3	7.6	0.2	3.5	...	0.4	3.4
Fulton	3.6	...	2.0	...	0.1	1.4	11.8	...	5.6	...	0.5	5.7
Garland	16.0	...	11.7	...	0.3	4.0	62.2	...	54.2	...	0.9	7.1
Grant	23.5	...	10.9	...	3.0	9.5	103.5	...	53.1	...	12.0	38.4
Greene	1.4	...	0.1	...	0.5	0.7	4.0	...	0.3	0.1	1.8	1.9
Hempstead	16.0	2.5	9.4	...	1.1	3.0	56.6	6.8	36.3	...	3.3	10.1
Hot Spring	15.0	2.7	7.2	...	0.8	4.3	62.8	14.5	35.5	...	1.2	11.5
Howard	28.7	1.4	20.8	...	1.9	4.6	141.0	5.1	118.1	...	4.0	13.9
Independence	2.8	...	0.4	...	0.1	2.3	9.8	...	1.4	...	...	8.4
Izard	1.4	...	1.2	...	0.1	0.1	5.7	...	4.8	...	0.3	0.7
Jefferson	10.2	...	4.7	...	0.9	4.6	40.2	...	22.9	...	4.0	13.3
Johnson	2.8	...	1.8	...	...	1.0	7.8	...	6.6	0.2	...	1.0
Lafayette	12.1	...	10.2	...	0.2	1.7	40.7	...	35.2	...	0.1	5.4
Lawrence	1.4	...	...	...	0.2	1.2	4.1	...	...	...	0.7	3.3
Lee	5.9	...	...	...	1.1	4.7	27.5	...	...	...	4.7	22.8
Lincoln	4.2	0.3	2.1	...	0.8	1.2	13.4	0.6	8.5	...	2.6	1.7
Little River	10.3	...	8.1	...	0.4	1.9	36.3	...	32.6	...	0.2	3.5
Logan	5.9	...	5.2	...	0.1	0.6	26.0	...	24.7	...	...	1.4
Lonoke	...	...	...	...	...	...	...	...	...	...	...	...
Madison	3.1	...	0.4	0.1	0.1	2.4	9.7	...	1.5	0.2	0.5	7.4
Marion	0.2	...	...	...	...	0.2	...	...	...	...	...	...
Miller	7.5	...	4.1	...	1.0	2.3	24.9	...	16.9	...	2.8	5.2
Monroe	5.6	...	0.2	...	1.0	4.4	26.7	...	0.8	...	4.0	21.9
Montgomery	18.8	1.5	13.0	...	0.7	3.6	69.6	8.0	56.6	...	0.7	4.3
Nevada	20.1	1.4	10.1	...	2.5	6.1	76.7	5.1	46.2	...	7.2	18.2
Newton	6.0	...	0.2	...	0.6	5.1	18.8	...	0.5	...	2.4	15.9
Ouachita	29.5	1.6	12.2	...	6.0	9.7	118.6	5.7	57.7	...	25.7	29.5
Perry	8.9	0.9	5.8	...	0.4	1.8	34.8	4.4	27.4	...	1.2	1.9
Phillips	1.6	...	...	...	0.9	0.7	7.7	...	...	...	5.0	2.7
Pike	23.9	2.8	17.3	0.1	1.0	2.8	102.0	8.0	87.8	0.2	1.6	4.4
Poinsett	0.3	...	...	...	...	0.3	...	...	...	...	...	...
Polk	16.8	0.1	14.9	...	0.2	1.5	72.1	0.5	68.3	...	0.2	3.2
Pope	5.8	...	3.1	...	0.3	2.3	16.5	...	9.9	...	0.9	5.8
Prairie	0.6	...	...	...	0.4	0.2	3.7	...	...	...	2.5	1.2
Pulaski	3.4	...	2.0	...	0.4	1.0	9.2	...	7.0	...	0.9	1.3
Randolph	2.9	...	...	...	0.2	2.7	9.5	...	...	...	0.3	9.2
St. Francis	0.7	...	...	0.1	0.1	0.5	2.9	...	...	0.2	0.7	2.0
Saline	21.7	2.4	12.3	...	1.3	5.6	70.9	9.2	44.8	...	3.4	13.6

Table 19–*Average net annual removals of growing stock and sawtimber on timberland by county and species group, Arkansas, 1988 - Continued*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Scott	17.4	...	15.6	0.2	...	1.6	66.1	...	63.9	0.6	...	1.5
Searcy	2.4	...	0.1	...	0.1	2.2	7.2	...	...	...	0.2	6.9
Sebastian	1.2	...	1.0	...	...	0.1	4.1	...	4.1	...	...	...
Sevier	18.5	0.1	12.9	...	1.7	3.8	77.1	0.2	63.9	...	3.2	9.8
Sharp	3.2	1.0	...	...	...	2.2	8.4	1.1	...	...	...	7.4
Stone	3.0	...	0.9	...	0.1	1.9	9.6	...	3.0	...	0.4	6.3
Union	43.7	1.2	30.4	...	3.6	8.4	193.7	5.0	150.8	0.2	8.0	29.6
Van Buren	2.7	0.4	1.6	...	...	0.7	7.5	1.3	5.2	...	...	1.0
Washington	3.7	...	...	...	0.2	3.4	11.7	...	...	0.2	1.0	10.6
White	2.8	...	...	...	0.3	2.5	8.5	...	...	...	1.4	7.2
Woodruff	3.3	...	...	...	1.2	2.1	12.6	...	...	...	3.6	9.0
Yell	10.9	...	8.3	0.3	0.5	1.8	37.9	0.1	28.0	0.9	2.0	6.8
All counties	663.4	29.6	390.2	3.0	53.9	186.6	2621.8	93.4	1777.4	8.9	168.0	574.1

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.
[3] Mississippi included in Crittenden.
[4] Jackson included in Cross.

Table 20–*Average net annual growth and average annual removals of growing stock on timberland by species, Arkansas, 1988*

Species	Growth	Removals
	Million cubic feet	
Yellow pines	377.4	419.8
Other softwoods	10.4	3.0
Total softwoods	387.8	422.8
Select white-red oaks	107.7	55.9
Other white-red oaks	153.5	103.4
Hickory	35.9	18.5
Hard maple	2.2	0.1
Sweetgum	49.7	32.4
Ash-walnut-black cherry	15.8	4.8
Yellow-poplar	0.5	...
Other hardwoods	60.4	25.4
Total hardwoods	425.6	240.6
All species	813.4	663.4

Table 21–*Average net annual growth and average annual removals of sawtimber on timberland by species, Arkansas, 1988*

Species	Growth	Removals
	- - - - - - Million board feet - - - - -	
Yellow pines	1799.9	1870.8
Other softwoods	25.7	8.9
Total softwoods	1825.6	1879.7
Select white-red oaks	403.1	181.4
Other white-red oaks	615.2	317.3
Hickory	113.2	53.0
Hard maple	7.9	...
Sweetgum	173.3	99.7
Ash-walnut-black cherry	55.3	15.2
Yellow-poplar	3.2	...
Other hardwoods	211.7	75.5
Total hardwoods	1582.9	742.1
All species	3408.5	2621.8

Table 22–*Average annual mortality of growing stock and sawtimber on timberland by species, Arkansas, 1988*

Species	Growing stock	Sawtimber
	- - - - Million cubic feet - - - -	*Million board feet - - - -*
Yellow pines	41.2	103.2
Other softwoods	1.5	3.1
Total softwoods	42.7	106.3
Select white-red oaks	17.0	43.8
Other white-red oaks	32.7	76.3
Hickory	10.4	25.7
Hard maple	0.2	0.3
Sweetgum	12.8	37.2
Ash-walnut-black cherry	3.4	7.9
Other hardwoods	22.8	67.6
Total hardwoods	99.4	258.7
All species	142.1	365.0

Table 23–*Average net annual growth and average annual removals of growing stock on timberland by ownership class and species group, Arkansas, 1988*

	Growth						Removals					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet											
National forest	88.9	0.8	39.8	1.2	8.1	39.0	51.5	0.5	35.8	...	1.2	14.0
Other public	36.5	0.4	4.8	0.7	8.5	22.0	11.7	1.7	5.8	0.2	1.2	2.8
Forest industry	261.1	4.5	170.5	1.2	21.7	63.2	321.3	9.9	220.5	0.6	23.4	66.8
Forest industry-leased	1.1	...	0.5	0.1	...	0.5	0.7	...	0.7	...	...	...
Other private	425.9	9.5	146.6	7.3	60.6	201.9	278.3	17.4	127.4	2.2	28.1	103.0
All ownerships	813.4	15.2	362.2	10.4	99.0	326.6	663.4	29.6	390.2	3.0	53.9	186.6

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 24–*Average net annual growth and average annual removals of sawtimber on timberland by ownership class and species group, Arkansas, 1988*

	Growth						Removals					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million board feet											
National forest	432.0	4.9	240.9	1.3	35.1	149.7	184.7	0.2	152.3	...	2.4	29.7
Other public	156.9	1.6	23.6	2.3	29.2	100.2	49.2	5.1	28.4	1.0	5.6	9.2
Forest industry	1077.2	26.4	734.4	2.9	84.8	228.7	1382.0	37.8	1065.9	2.6	75.5	200.2
Forest industry-leased	5.2	...	2.9	...	0.1	2.2	3.8	...	3.8	...	...	...
Other private	1737.2	57.1	708.2	19.1	208.2	744.6	1002.1	50.3	527.1	5.3	84.5	334.9
All ownerships	3408.5	90.1	1709.9	25.7	357.3	1225.5	2621.8	93.4	1777.4	8.9	168.0	574.1

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 25–*Volume of sawtimber on timberland by species and tree grade, Arkansas, 1988*

Species	All grades	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
	Million board feet					
Yellow pines	32512.9	8276.1	7469.6	16603.6	...	163.6
Cypress	907.9	274.5	248.0	260.7	...	124.7
Redcedar	243.8	230.6	...	...	...	13.3
Total softwoods	33664.6	8781.1	7717.6	16864.3	...	301.6
Select white-red oaks	7725.3	548.7	1419.7	3690.9	1642.6	423.4
Other white-red oaks	11788.5	515.8	1858.6	5199.2	3381.6	833.2
Hickory	3006.8	138.8	462.9	1564.9	635.3	204.9
Hard maple	101.5	...	...	34.7	43.0	23.9
Sweetgum	4283.0	508.9	1012.7	1834.5	671.5	255.4
Tupelo and blackgum	1173.1	91.8	241.0	568.1	97.4	174.8
Ash-walnut-black cherry	1014.9	120.1	241.9	489.3	37.9	125.7
Yellow-poplar	61.3	17.9	7.6	21.4	6.8	7.7
Other hardwoods	3930.9	264.6	523.5	1956.5	683.2	503.2
Total hardwoods	33085.3	2206.6	5767.8	15359.6	7199.2	2552.2
All species	66749.9	10987.7	13485.4	32223.8	7199.2	2853.8

Supplemental Tables 26-36

Table 26 *Area of timberland by stand age, forest type group and type of regeneration, Arkansas, 1988*

Stand age class	Pine		Oak-pine		Other hardwood types	
	Artificial	Natural	Artificial	Natural	Artificial	Natural
	Thousand acres					
1-10	467.6	81.9	213.0	71.8	166.3	260.0
11-20	371.8	81.7	38.4	23.6	5.4	10.3
21-30	77.2	70.3	6.6	15.5	5.6	11.8
31-40	67.2	73.4	5.4	16.2		10.9
41-50	33.2	42.8		6.7		6.7
>50	[illegible]	71.3	5.8	21.7		8.2
Mixed	[illegible]	2608.4	96.9	2528.4	79.8	9441.1
Total	1155.8	[illegible]	366.1	2683.9	257.0	9749.0

Table 27 *Volume of softwood growing stock on timberland by forest type, Arkansas, 1988*

County	Forest type group						
	Loblolly-shortleaf pine						
	Total	Planted	Natural	Oak-pine	Oak-hickory	Oak-gum-cypress	Elm-ash cottonwood
	Million cubic feet						
Arkansas	13.9					13.9	
Ashley	363.0		297.0	47.6	10.0	8.4	
Baxter	27.8	12.5	0.4	10.9	4.0		
Benton	3.1		1.2		1.9		
Boone	2.2			1.0	1.2		
Bradley	274.5	19.1	155.1	73.2	15.2	12.0	
Calhoun	242.3	22.1	146.6	46.2	6.3	21.0	
Carroll	10.9			6.7	4.2		
Chicot	0.4					0.2	0.2
Clark	288.5	40.1	135.6	86.1	21.2	5.4	
Clay	0.4					0.4	
Cleburne	78.8	11.3	32.7	25.0	9.7	...	...
Cleveland	289.9	28.9	169.7	62.7	26.8	1.7	
Columbia	319.9	12.4	214.0	79.3	11.9	2.3	
Conway	40.2		17.5	16.5	6.2	...	
Craighead	9.4				0.4	5.3	3.7
Crawford	42.2	2.3	18.8	16.8	4.3	...	
Crittenden[1]	4.8			...		4.6	0.2
Cross[2]						...	...
Dallas	291.1	26.5	162.1	75.8	24.6	2.1	...
Desha	20.6					20.6	
Drew	259.2	44.8	129.7	54.6	17.3	12.8	
Faulkner	12.3	5.6		4.6	2.1	...	...
Franklin	43.5		29.6	11.9	2.0	...	...
Fulton	22.0	21.0		0.2	0.9	...	...
Garland	170.1	8.0	108.6	21.4	32.2	...	...
Grant	222.4	56.8	90.1	52.8	16.7	5.9	...
Greene	9.6			5.7	3.9	...	...
Hempstead	222.7	109.2	48.7	56.1	8.1	0.6	...
Hot Spring	109.5	19.2	21.0	45.1	21.5	2.8	...
Howard	115.6	31.1	37.7	40.6	2.5	3.8	...

Table 27–*Volume of softwood growing stock on timberland by forest type, Arkansas, 1988 - Continued*

County	Total	Loblolly-shortleaf pine Planted	Loblolly-shortleaf pine Natural	Oak-pine	Oak-hickory	Oak-gum-cypress	Elm-ash cottonwood
	Million cubic feet						
Independence	32.8	...	17.5	10.2	5.1	...	...
Izard	59.5	...	39.2	12.3	8.0	...	...
Jefferson	104.1	6.2	50.0	15.3	17.0	15.6	
Johnson	101.4	27.9	49.2	19.8	4.6	...	
Lafayette	191.5	18.9	121.5	27.0	12.8	11.3	
Lawrence	1.3	...	...	...	1.3	...	
Lee	3.1	...	...	...	...	3.1	
Lincoln	60.7	4.8	38.9	6.3	8.5	2.2	
Little River	119.0	10.6	64.0	42.3	1.4	0.7	
Logan	121.1	...	79.7	34.5	6.9	...	
Lonoke	5.6	3.5	...	...	...	2.2	...
Madison	12.5	...	0.2	12.1	0.2	...	...
Marion	14.9	...	7.2	1.9	5.9	...	...
Miller	87.6	8.4	53.1	10.4	9.0	6.8	...
Monroe	33.2	...	...	4.7	3.3	25.2	
Montgomery	434.0	25.4	318.3	64.0	26.4	...	
Nevada	248.1	25.3	136.0	60.5	13.0	13.2	
Newton	49.8	...	23.7	15.6	10.6	...	
Ouachita	291.4	19.4	189.0	60.7	12.5	9.8	
Perry	164.9	3.2	115.7	41.3	4.0	0.7	
Phillips	0.7	...	...	...	...	0.7	...
Pike	209.3	52.2	100.8	51.0	5.3	...	...
Poinsett	2.5	...	...	...	...	0.2	2.3
Polk	185.7	1.3	73.6	88.4	22.4	...	...
Pope	123.3	...	75.6	35.6	11.7	0.3	
Prairie	8.5	...	...	...	0.4	8.0	...
Pulaski	73.7	1.6	24.9	32.9	8.1	6.2	...
Randolph	2.0	...	0.6	...	1.0	0.4	...
St. Francis	0.5	...	...	...	...	0.5	
Saline	160.5	25.5	71.7	50.9	11.2	1.1	
Scott	464.4	36.1	345.1	56.2	27.1	...	
Searcy	22.3	...	9.4	2.2	10.7	...	...
Sebastian	8.9	...	3.7	2.1	3.1	...	...
Sevier	81.4	2.7	51.1	16.9	10.1	0.5	...
Sharp	11.3	...	1.7	6.0	3.6	...	...
Stone	57.0	2.8	15.5	31.5	7.1	...	...
Union	468.3	52.1	257.5	117.5	30.8	10.3	...
Van Buren	76.4	1.9	32.5	29.0	13.0	...	...
Washington	13.7	...	4.1	7.6	2.0	...	...
White	27.5	...	10.4	5.3	5.6	6.3	...
Woodruff	10.8	...	...	...	...	10.8	...
Yell	267.2	2.3	175.1	80.2	6.3	3.4	...
All counties	7923.0	802.4	4372.8	1892.7	585.2	263.5	6.4

Forest type group

[1] Mississippi included in Crittenden.
[2] Jackson included in Cross.

Table 28–*Volume of hardwood growing stock on timberland by forest type, Arkansas, 1988*

County	Total	Forest type group					
		Loblolly-shortleaf pine					
		Planted	Natural	Oak-pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood
	Million cubic feet						
Arkansas	282.9	...	...	...	56.4	208.3	18.2
Ashley	124.8	...	19.2	13.1	35.3	57.3	...
Baxter	144.2	2.6	...	13.5	128.2	...	...
Benton	179.1	...	...	0.4	175.1	...	3.5
Boone	91.3	...	...	6.1	85.2	...	...
Bradley	240.5	...	4.9	45.8	56.6	133.3	...
Calhoun	168.2	...	12.1	17.8	23.1	115.2	...
Carroll	111.4	...	...	3.1	108.4	...	...
Chicot	100.9	...	...	...	...	74.7	26.2
Clark	214.7	3.3	15.3	50.5	75.1	70.5	...
Clay	118.8	...	...	...	8.7	110.0	...
Cleburne	100.9	2.1	8.1	26.7	61.7	2.3	...
Cleveland	273.8	0.5	27.1	32.6	109.9	103.8	...
Columbia	225.0	1.1	30.0	52.9	60.8	80.1	...
Conway	76.5	...	4.7	14.6	37.6	19.6	...
Craighead	45.4	...	...	...	8.3	25.8	11.3
Crawford	188.7	1.3	...	29.4	154.8	3.2	...
Crittenden[1]	69.1	...	...	...	...	34.4	34.7
Cross[2]	99.0	...	...	...	58.0	41.0	...
Dallas	183.6	8.6	27.0	29.2	71.6	47.1	...
Desha	232.7	...	...	...	...	193.4	39.2
Drew	189.2	0.5	17.1	24.1	79.0	68.5	...
Faulkner	84.2	0.3	...	4.2	50.8	28.9	...
Franklin	163.5	...	4.1	13.9	143.4	2.1	...
Fulton	75.5	0.8	...	1.0	73.8	...	...
Garland	118.4	0.6	23.0	9.7	85.1	...	...
Grant	252.0	3.0	12.2	36.5	79.5	120.7	...
Greene	57.5	...	...	6.1	48.1	3.3	...
Hempstead	162.7	6.9	10.3	40.1	51.0	54.3	...
Hot Spring	119.9	4.8	7.3	27.2	42.9	37.7	...
Howard	90.6	1.0	3.4	26.8	24.2	35.1	...
Independence	117.4	...	3.1	14.5	94.4	5.3	...
Izard	96.0	...	7.3	14.4	69.0	5.3	...
Jefferson	181.0	2.7	5.6	7.7	52.4	97.8	14.8
Johnson	225.4	3.8	6.5	20.7	194.5	...	...
Lafayette	127.4	1.4	17.4	27.3	31.2	50.2	...
Lawrence	52.1	...	...	...	23.6	28.5	...
Lee	163.0	...	...	...	34.4	89.5	39.0
Lincoln	111.9	1.8	1.5	7.0	54.2	44.1	3.4
Little River	87.2	..	12.1	26.6	24.2	22.8	1.5
Logan	87.1	..	9.4	21.6	40.6	15.4	...
Lonoke	67.4	...	...	...	11.0	56.4	...
Madison	298.1	..	...	9.0	289.1	...	...
Marion	103.5	...	2.0	2.6	98.9	...	...
Miller	92.9	1.9	17.2	7.5	42.8	23.5	...
Monroe	194.2	...	...	2.8	17.3	174.0	...
Montgomery	191.7	1.2	41.8	56.0	92.6	...	...
Nevada	184.7	1.9	16.8	45.7	57.8	62.5	...
Newton	366.4	...	5.4	15.0	346.0	...	...
Ouachita	271.8	4.9	26.5	36.9	48.5	154.9	...
Perry	74.0	0.2	13.4	17.2	26.1	17.2	...
Phillips	114.0	...	...	...	47.1	66.9	...
Pike	66.8	9.6	13.1	33.2	11.0	...	...
Poinsett	74.5	...	...	...	17.1	53.0	4.5
Polk	173.9	0.7	15.3	65.2	92.7	...	...
Pope	272.0	...	13.3	28.5	228.5	1.8	...
Prairie	133.9	...	...	...	18.4	115.4	...
Pulaski	103.8	0.9	2.6	25.3	54.8	18.3	1.8
Randolph	94.1	...	0.4	1.9	62.1	29.6	...
St. Francis	68.5	...	...	...	14.5	54.0	...
Saline	176.5	3.9	12.0	51.5	72.8	36.3	...
Scott	165.5	2.0	26.4	40.2	96.9	...	...

Table 28–*Volume of hardwood growing stock on timberland by forest type, Arkansas, 1988 - Continued*

County	Total	Forest type group: Loblolly-shortleaf pine – Planted	Loblolly-shortleaf pine – Natural	Oak-pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood
	- - -	- - -	- - -	*Million cubic feet*	- - -	- - -	- - -
Searcy	220.2	...	2.9	6.3	200.7	10.3	...
Sebastian	42.5	...	...	2.8	23.0	14.3	2.4
Sevier	166.8	1.2	7.5	18.0	60.1	80.0	...
Sharp	94.0	...	1.1	6.2	80.2	6.4	...
Stone	220.3	0.9	3.1	31.9	184.4	...	...
Union	384.4	6.0	53.8	68.6	118.6	137.4	...
Van Buren	197.4	...	3.4	25.4	168.5	...	...
Washington	172.4	...	...	6.0	166.4	...	...
White	185.1	...	5.9	4.4	75.5	99.3	...
Woodruff	77.9	...	...	...	...	77.9	...
Yell	185.6	...	18.4	42.0	35.3	90.0	...
All counties	11068.1	82.3	591.1	1315.3	5469.6	3409.1	200.7

[1] Mississippi included in Crittenden.
[2] Jackson included in Cross.

Table 29–*Volume of softwood growing stock in the saw-log portion of sawtimber trees on timberland by forest type, Arkansas, 1988*

County	Total	Forest type group: Loblolly-shortleaf pine – Planted	Loblolly-shortleaf pine – Natural	Oak-pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood
	- - -	- - -	- - -	*Million cubic feet*	- - -	- - -	- - -
Arkansas	12.9	...	...	...	...	12.9	...
Ashley	273.1	...	218.9	39.7	7.3	7.2	...
Baxter	15.9	7.2	...	7.2	1.5	...	...
Benton	2.5	...	0.8	...	1.6	...	...
Boone	1.1	...	...	...	1.1	...	...
Bradley	196.6	13.6	107.4	54.0	11.5	10.2	...
Calhoun	162.0	5.2	98.7	36.9	3.8	17.4	...
Carroll	5.9	...	...	4.1	1.8	...	...
Chicot	0.3	...	...	...	...	0.2	0.2
Clark	208.6	19.7	99.5	72.4	13.2	3.8	...
Clay	0.3	...	...	...	...	0.3	...
Cleburne	50.5	8.6	21.0	14.6	6.3	...	...
Cleveland	212.3	19.6	118.8	50.0	22.8	1.2	...
Columbia	220.8	2.6	144.6	64.6	7.1	1.9	...
Conway	22.4	...	7.9	11.3	3.2	...	...
Craighead	7.6	...	...	...	...	4.3	3.2
Crawford	27.6	...	17.7	7.9	2.0	...	...
Crittenden[1]	3.7	...	...	...	...	3.7	...
Cross[2]	...	...	...	...	...	...	...
Dallas	205.0	13.0	115.7	55.7	19.1	1.6	...
Desha	17.9	...	...	...	...	17.9	...
Drew	188.4	30.8	95.1	41.0	13.4	8.2	...
Faulkner	4.0	0.9	...	2.0	1.1	...	...
Franklin	24.2	...	17.5	6.5	0.3	...	...
Fulton	9.4	9.1	...	...	0.3	...	...
Garland	110.2	0.9	70.6	14.4	24.3	...	...
Grant	114.8	9.4	54.5	34.8	11.2	4.8	...
Greene	7.5	...	...	4.4	3.1	...	...
Hempstead	167.5	86.0	35.6	39.8	5.6	0.5	...
Hot Spring	67.3	6.4	11.5	30.1	16.5	2.6	...
Howard	74.1	10.8	31.5	27.1	1.6	3.0	...

Table 29–*Volume of softwood growing stock in the saw-log portion of sawtimber trees on timberland by forest type, Arkansas, 1988 - Continued*

County	Total	Forest type group					
		Loblolly-shortleaf pine		Oak-pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood
		Planted	Natural				
	Million cubic feet						
Independence	16.3	...	10.6	3.4	2.3	...	...
Izard	29.8	...	18.5	5.7	5.7	...	...
Jefferson	62.0	...	27.9	10.4	10.7	13.1	...
Johnson	69.5	23.5	29.9	13.4	2.7	...	...
Lafayette	130.6	7.2	86.3	20.4	6.6	10.1	...
Lawrence	0.6	...	...	...	0.6	...	...
Lee	2.8	...	...	...	...	2.8	...
Lincoln	40.2	2.0	26.3	4.7	5.3	1.9	...
Little River	92.3	1.1	54.5	35.3	0.7	0.6	...
Logan	77.6	...	53.8	20.1	3.7	...	...
Lonoke	4.7	2.8	...	...	...	1.9	...
Madison	9.1	...	...	8.9	0.2	...	...
Marion	6.6	...	5.3	0.2	1.1	...	...
Miller	60.8	3.2	41.4	5.5	5.5	5.1	...
Monroe	29.3	...	...	2.7	2.4	24.2	...
Montgomery	311.9	11.0	236.1	46.2	18.6	...	...
Nevada	185.4	19.3	99.6	43.3	10.7	12.5	...
Newton	29.9	...	15.4	7.4	7.2	...	...
Ouachita	227.7	14.6	141.1	52.0	10.7	9.3	...
Perry	114.4	...	83.0	28.3	2.6	0.5	...
Phillips	0.7	...	...	...	...	0.7	...
Pike	144.3	31.1	70.4	38.8	4.0	...	...
Poinsett	2.5	...	...	...	...	0.2	2.3
Polk	122.2	...	53.4	55.5	13.3	...	...
Pope	80.5	...	54.4	20.6	5.5	...	...
Prairie	7.8	...	...	...	0.4	7.4	...
Pulaski	51.8	0.6	18.0	23.0	5.1	5.1	...
Randolph	1.4	...	0.3	...	0.6	0.4	...
St. Francis	0.4	...	...	...	...	0.4	...
Saline	107.3	13.4	47.7	36.7	8.7	0.8	...
Scott	300.7	20.2	228.3	34.6	17.6	...	...
Searcy	15.8	...	8.1	0.3	7.4	...	...
Sebastian	4.4	...	1.7	...	2.7	...	...
Sevier	60.2	0.3	39.4	12.7	7.2	0.5	...
Sharp	2.1	...	...	1.1	1.0	...	...
Stone	35.6	1.7	7.2	23.0	3.7	...	...
Union	357.5	28.9	201.2	91.5	26.5	9.4	...
Van Buren	44.2	...	18.7	19.0	6.6	...	...
Washington	6.3	...	1.9	3.9	0.4	...	...
White	16.8	...	4.7	4.0	2.4	5.6	...
Woodruff	9.3	...	...	...	...	9.3	...
Yell	189.0	...	124.8	58.4	4.1	1.8	...
All counties	5476.8	424.9	3077.0	1349.5	394.0	225.7	5.7

[1] Mississippi included in Crittenden.

[2] Jackson included in Cross.

Table 30–*Volume of hardwood growing stock in the saw-log portion of sawtimber trees on timberland by forest type, Arkansas, 1988*

County	Total	Forest type group: Loblolly-shortleaf pine: Planted	Loblolly-shortleaf pine: Natural	Oak-pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood
	Million cubic feet						
Arkansas	194.6	...	...	...	38.9	146.3	9.4
Ashley	73.1	...	6.8	6.0	22.7	37.7	...
Baxter	78.0	1.8	...	5.9	70.3	...	...
Benton	93.6	...	...	0.4	92.8	...	0.4
Boone	46.8	...	...	3.3	43.5	...	...
Bradley	137.8	...	1.2	18.3	29.1	89.2	...
Calhoun	91.6	...	2.0	8.3	10.9	70.3	...
Carroll	57.3	...	...	0.6	56.7	...	...
Chicot	70.8	...	...	...	...	53.8	17.0
Clark	107.1	0.6	5.1	18.3	36.4	46.6	...
Clay	75.7	...	...	...	4.7	71.0	...
Cleburne	30.3	0.9	2.5	8.7	17.5	0.7	...
Cleveland	156.5	...	9.7	13.3	59.1	74.4	...
Columbia	112.0	...	9.4	23.5	29.4	49.7	...
Conway	35.8	...	3.3	6.3	15.8	10.4	...
Craighead	26.9	...	...	...	3.9	15.0	8.0
Crawford	92.2	...	...	12.4	79.5	0.4	...
Crittenden[1]	42.0	...	...	...	...	16.5	25.5
Cross[2]	52.8	...	...	...	33.1	19.7	...
Dallas	90.6	4.6	11.1	11.2	34.5	29.1	...
Desha	155.6	...	...	...	...	131.9	23.7
Drew	98.9	0.2	4.0	5.2	47.9	41.7	...
Faulkner	37.5	0.1	...	0.7	18.8	17.9	...
Franklin	75.9	...	1.4	3.6	70.2	0.7	...
Fulton	28.2	0.2	...	0.7	27.3	...	...
Garland	35.5	...	3.0	2.9	29.5	...	...
Grant	133.5	0.6	5.7	11.9	35.5	79.8	...
Greene	35.7	...	...	3.9	30.5	1.4	...
Hempstead	75.4	1.4	6.6	14.6	24.9	28.0	...
Hot Spring	50.5	...	3.4	15.4	17.0	14.7	...
Howard	33.1	0.4	2.2	9.5	7.9	13.2	...
Independence	62.6	...	0.6	7.3	50.0	4.7	...
Izard	40.7	...	1.6	5.7	29.8	3.5	...
Jefferson	107.9	0.3	2.7	4.4	24.6	62.9	13.1
Johnson	113.3	0.9	2.4	6.4	103.5	...	...
Lafayette	56.9	0.2	5.6	12.6	10.3	28.2	...
Lawrence	29.5	...	...	...	10.8	18.7	...
Lee	118.5	...	...	...	24.2	58.0	36.3
Lincoln	67.3	1.0	...	2.5	27.2	33.7	2.8
Little River	37.3	...	6.5	11.0	8.8	10.6	0.5
Logan	43.6	...	4.3	8.7	19.9	10.7	...
Lonoke	39.1	...	...	...	6.7	32.4	...
Madison	142.8	...	...	3.7	139.1	...	...
Marion	49.5	...	0.6	1.1	47.8	...	...
Miller	38.4	...	8.1	4.0	16.7	9.5	...
Monroe	118.9	...	...	1.6	8.4	108.9	...
Montgomery	71.1	...	15.2	24.7	31.2	...	...
Nevada	96.0	0.5	6.7	17.0	29.3	42.4	...
Newton	160.5	...	4.0	5.7	150.7	...	...
Ouachita	141.6	2.5	7.6	14.6	17.9	99.1	...
Perry	30.1	...	3.6	6.0	8.3	12.2	...
Phillips	75.5	...	...	...	35.7	39.8	...
Pike	31.2	4.3	3.2	17.7	5.9	...	...
Poinsett	52.5	...	...	...	12.0	36.4	4.0
Polk	52.2	0.3	4.2	17.5	30.1	...	...
Pope	127.9	...	4.0	10.8	112.0	1.0	...
Prairie	87.8	...	...	...	8.3	79.5	...
Pulaski	43.4	0.2	1.6	8.5	24.5	8.3	0.3
Randolph	51.6	...	...	1.2	29.3	21.1	...
St. Francis	41.2	...	...	...	6.2	35.0	...

Table 30–*Volume of hardwood growing stock in the saw-log portion of sawtimber trees on timberland by forest type, Arkansas, 1988 - Continued*

County	Total	Forest type group					
		Loblolly-shortleaf pine		Oak-pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood
		Planted	Natural				
	Million cubic feet						
Saline	83.6	0.9	5.6	21.3	35.6	20.1	...
Scott	54.8	0.9	6.1	12.8	35.0	...	...
Searcy	93.9	...	0.9	0.5	87.2	5.2	...
Sebastian	15.9	...	...	1.3	8.7	4.5	1.3
Sevier	88.2	0.4	2.1	5.9	30.7	49.2	...
Sharp	32.7	...	0.6	1.4	26.1	4.7	...
Stone	95.0	0.2	0.5	19.0	75.3	...	...
Union	214.3	2.4	19.3	32.6	66.9	93.1	...
Van Buren	70.9	...	0.3	9.8	60.8	...	...
Washington	69.7	...	...	3.3	66.3	...	...
White	100.3	...	1.2	1.2	29.9	67.9	...
Woodruff	43.8	...	...	...	...	43.8	...
Yell	82.2	...	4.7	12.6	14.8	50.1	...
All counties	5599.3	25.9	201.3	519.3	2554.8	2155.6	142.4

[1] Mississippi included in Crittenden.
[2] Jackson included in Cross.

Table 31–*Volume of timber on timberland by county, class of timber and species group, Arkansas, 1988*

County	All classes	Growing stock		Rough		Rotten	
		Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
	Million cubic feet						
Arkansas	321.5	13.9	282.9	1.3	16.9	1.2	5.2
Ashley	509.5	363.0	124.8	2.4	16.5	...	2.8
Baxter	197.6	27.5	144.2	1.4	22.2	...	2.3
Benton	206.2	3.1	179.1	...	23.7	...	0.4
Boone	110.2	2.2	91.3	0.2	13.7	...	2.8
Bradley	540.4	274.5	240.5	1.1	18.8	...	5.4
Calhoun	434.2	242.3	168.2	3.2	15.5	0.9	4.0
Carroll	152.8	10.9	111.4	0.8	25.0	...	4.7
Chicot	119.3	0.4	100.9	...	16.3	...	1.7
Clark	537.2	288.5	214.7	6.8	25.5	...	1.8
Clay	127.8	0.4	118.8	...	7.6	...	0.9
Cleburne	189.3	78.8	100.9	0.9	7.4	...	1.4
Cleveland	592.3	289.9	273.8	5.5	15.2	2.2	5.8
Columbia	579.4	319.9	225.0	6.1	23.9	...	4.6
Conway	129.9	40.2	76.5	2.9	9.2	...	1.1
Craighead	66.3	9.4	45.4	0.5	8.7	...	2.3
Crawford	254.9	42.2	188.7	2.2	20.6	...	1.2
Crittenden[1]	79.4	4.8	69.1	...	3.8	0.5	1.2
Cross[2]	113.4	...	99.0	...	10.5	...	3.9
Dallas	499.4	291.1	183.6	1.0	14.5	1.7	7.7
Desha	279.2	20.6	232.7	1.0	20.1	1.4	3.4
Drew	505.1	259.2	189.2	9.8	37.9	0.7	8.3
Faulkner	114.4	12.3	84.2	0.7	15.0	...	2.2
Franklin	237.7	43.5	163.5	0.8	23.5	...	6.4
Fulton	115.8	22.0	75.5	1.0	16.7	...	0.5
Garland	306.4	170.1	118.4	0.6	13.7	...	3.5
Grant	501.0	222.4	252.0	3.5	19.8	0.6	2.8
Greene	73.0	9.6	57.5	...	4.5	...	1.4
Hempstead	404.7	222.7	162.7	1.2	14.5	...	3.6
Hot Spring	246.6	109.5	119.9	2.7	11.4	...	3.1
Howard	218.2	115.6	90.6	1.0	9.5	...	1.5

Table 31–*Volume of timber on timberland by county, class of timber and species group, Arkansas, 1988 - Continued*

County	All classes	Growing stock		Rough		Rotten	
		Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
	Million cubic feet						
Independence	168.4	32.8	117.4	0.9	15.3	...	2.0
Izard	176.1	59.5	96.0	0.9	17.0	...	2.7
Jefferson	292.6	104.1	181.0	0.5	6.5	...	0.4
Johnson	355.4	101.4	225.4	1.6	23.0	...	4.0
Lafayette	331.7	191.5	127.4	0.6	9.0	...	3.2
Lawrence	63.5	1.3	52.1	0.3	7.8	...	2.0
Lee	182.4	3.1	163.0	...	13.1	...	3.2
Lincoln	186.2	60.7	111.9	1.4	11.3	...	0.9
Little River	225.2	119.0	87.2	3.7	12.9	...	2.5
Logan	234.4	121.1	87.1	3.0	22.0	...	1.3
Lonoke	88.7	5.6	67.4	1.3	11.4	1.4	1.6
Madison	353.3	12.5	298.1	0.9	31.3	...	10.5
Marion	141.2	14.9	103.5	0.8	17.9	...	4.1
Miller	205.2	87.6	92.9	2.5	16.2	0.3	5.7
Monroe	249.8	33.2	194.2	...	20.3	...	2.1
Montgomery	675.7	434.0	191.7	13.1	32.0	0.1	4.7
Nevada	462.3	248.1	184.7	2.5	22.8	0.6	3.7
Newton	482.4	49.8	366.4	0.6	48.8	...	16.8
Ouachita	595.5	291.4	271.8	3.7	23.2	...	5.4
Perry	254.6	164.9	74.0	4.3	8.9	...	2.4
Phillips	132.9	0.7	114.0	...	14.9	...	3.3
Pike	305.7	209.3	66.8	16.5	12.0	...	1.1
Poinsett	84.8	2.5	74.5	0.5	6.0	...	1.2
Polk	403.8	185.7	173.9	4.4	28.8	...	10.9
Pope	420.4	123.3	272.0	1.0	20.2	...	4.0
Prairie	168.7	8.5	133.9	0.9	17.8	0.3	7.3
Pulaski	190.2	73.7	103.8	0.3	10.6	...	1.8
Randolph	118.1	2.0	94.1	0.8	17.5	...	3.7
St. Francis	81.0	0.5	68.5	...	7.4	...	4.6
Saline	355.0	160.5	176.5	1.0	13.1	...	3.9
Scott	692.2	464.4	165.5	10.7	42.2	0.2	9.3
Searcy	276.9	22.3	220.2	0.6	23.5	...	10.2
Sebastian	71.5	8.9	42.5	0.7	17.5	...	1.9
Sevier	268.1	81.4	166.8	0.3	18.5	...	1.2
Sharp	132.6	11.3	94.0	0.7	24.0	...	2.6
Stone	304.2	57.0	220.3	1.7	22.0	...	3.2
Union	905.8	468.3	384.4	6.1	37.2	...	9.8
Van Buren	303.1	76.4	197.4	2.1	19.2	...	8.1
Washington	229.9	13.7	172.4	1.0	40.9	...	1.9
White	228.5	27.5	185.1	1.6	13.2	...	1.1
Woodruff	101.6	10.8	77.9	...	11.0	0.5	1.4
Yell	489.4	267.2	185.6	3.6	29.1	...	3.9
All counties	20752.3	7923.0	11068.1	155.9	1319.0	12.7	273.6

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[1] Mississippi included in Crittenden.
[2] Jackson included in Cross.

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Table 32–*Number of live trees on timberland by detailed species and diameter class, Arkansas, 1988*

Species	Diameter class (inches at breast height)												
	All classes	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Shortleaf pine	876111	385579	183049	96788	80083	54796	37788	22536	9645	3833	1360	655	...
Loblolly pine	1118118	479654	286487	146922	84642	43208	30337	20271	11642	7204	4089	3534	95
Redcedar	334925	211955	75633	26423	13868	4141	1837	748	213	81	12	15	...
Cypress	14469	4061	1585	1749	1432	1285	1149	991	629	501	255	558	273
Total softwoods	2343623	1081249	546753	271882	180025	103430	71144	44546	22130	11619	5715	4762	368
Select white oaks	695708	315680	155796	88357	58489	33699	17411	12168	6191	3552	2217	2034	114
Select red oaks	231160	103124	43794	25209	19458	13488	9733	6007	3872	2512	1609	2159	195
Other white oaks	606949	265629	149396	75670	46612	28677	15713	10489	6319	3462	1866	2812	305
Other red oaks	816264	457106	136932	68605	51347	35107	23690	15906	11208	6688	4138	4886	650
Sweet pecan	9820	6215	659	1132	654	351	171	172	82	62	122	167	34
Water hickory	33724	15440	7745	2882	3017	1477	1159	577	483	391	230	259	62
Other hickories	1034376	629466	204969	103304	48143	23837	12569	6722	2933	1298	555	549	30
Persimmon	138330	114260	16053	4520	1902	941	496	96	37	26	...	...	...
Hard maple	74826	48357	17354	2852	3450	1466	564	367	192	121	57	45	...
Soft maple	487491	383568	72266	18702	6915	2971	1396	754	423	185	175	108	28
Boxelder	30288	16147	6366	2686	2464	942	751	406	354	85	62	23	...
Beech	21847	12689	5108	644	526	544	497	345	290	394	248	477	83
Sweetgum	968294	620836	174415	79311	39909	22829	13093	8338	4624	2535	1219	1050	136
Blackgum	442771	330465	63058	21848	10306	6281	3846	2722	2130	887	521	656	50
Other gums/tupelos	19830	4716	6239	2227	2213	1446	905	420	321	335	211	544	251
White ash	116747	82570	19285	6260	3480	2108	1410	802	441	149	74	145	24
Other ashes	147248	92460	28495	10554	6272	3775	1811	1373	1014	593	352	493	57
Sycamore	11266	3026	2902	1372	1001	818	595	434	376	264	130	318	28
Cottonwood	9086	3253	2738	403	190	425	350	413	411	261	201	370	70
Basswood	7729	4687	1515	469	232	302	284	121	42	12	21	44	...
Yellow-poplar	401	...	...	142	...	26	27	68	55	29	27	20	8
Magnolia	508	...	...	175	66	166	55	...	15	23	9	...	...
Sweetbay	23814	14202	7271	975	363	430	261	118	80	38	28	49	...
Willow	20247	6591	3593	1950	3040	1459	629	681	615	646	424	553	68
Black walnut	10860	3998	2573	1514	1186	870	334	119	129	85	19	35	...
Black cherry	77478	53594	15154	4108	2571	1036	412	365	98	65	48	29	...
American elm	100733	65068	16137	7653	5417	3030	1282	995	367	314	227	205	37
Other elms	662650	508188	106129	28944	10911	4797	1852	955	370	188	164	145	8
River birch	4318	1778	...	1078	367	377	315	129	77	64	52	67	13
Hackberry	104443	55138	19369	10355	7281	4548	2236	2035	1410	909	614	512	35
Black locust	12351	5526	1946	2562	1018	709	367	82	94	36	11	...	...
Other locusts	14539	6158	2745	1526	1530	1161	673	369	185	38	78	68	7
Sassafras	121050	105871	11508	2786	512	237	51	43	17	25	...	...	...
Dogwood	562166	479878	74631	6765	751	140	...	...	...	...	...	...	...
Holly	114581	85551	20508	4463	2181	1077	461	234	72	24	10	...	...
Other commercial	41178	29098	7242	2860	1233	453	142	88	17	26	11	7	...
Total hardwoods	7775068	4930335	1403891	594861	345008	202001	115539	74914	45343	26320	15733	18828	2296
Noncommercial	984738	779345	140487	41466	13805	5305	2148	1081	619	264	116	102	...
All species	11103429	6790929	2091131	908209	538838	310736	188831	120541	68091	38202	21564	23691	2664

Table 33—*Number of growing-stock trees on timberland by detailed species and diameter class, Arkansas, 1988*

Species	All classes	Diameter class (inches at breast height) 5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees										
Shortleaf pine	292123	86237	76639	53936	37526	22427	9582	3809	1339	630	...
Loblolly pine	335451	135420	81508	42038	30009	20130	11563	7169	4059	3460	95
Redcedar	40389	22939	12160	2938	1471	613	180	69	12	7	...
Cypress	7292	1321	1336	736	968	898	585	490	243	495	220
Total softwoods	675256	245917	171642	99648	69973	44068	21909	11538	5653	4592	315
Select white oaks	198013	76177	53790	31375	15245	10267	5164	2805	1659	1456	76
Select red oaks	71808	21315	17138	11869	8010	5055	3180	2031	1368	1695	147
Other white oaks	156564	61802	39912	24550	11606	7736	4675	2603	1460	1988	232
Other red oaks	197283	58292	47888	32641	20701	14195	10034	5801	3540	3803	389
Sweet pecan	2823	1132	604	351	171	151	68	51	95	167	34
Water hickory	8688	2361	2519	1069	956	498	452	356	185	243	49
Other hickories	162353	80765	41145	20312	10112	5599	2459	1067	438	425	30
Persimmon	5732	2980	1437	805	387	60	37	26	...	...	...
Hard maple	7450	2400	2802	1326	389	283	126	72	24	28	...
Soft maple	18720	10964	4124	1987	677	410	235	112	136	58	18
Boxelder	4186	1608	1332	453	342	168	177	48	45	14	...
Beech	2951	644	406	461	303	226	177	277	154	276	28
Sweetgum	150381	64343	35851	21723	11953	7880	4207	2333	1078	908	105
Blackgum	35018	14624	8020	4896	2907	1782	1434	597	333	384	40
Other gums/tupelos	7108	1760	2079	1406	397	244	229	227	145	433	188
White ash	10591	4261	2607	1463	1038	645	255	126	55	120	21
Other ashes	21262	7715	5683	3156	1340	1164	842	550	334	439	39
Sycamore	4319	976	718	746	540	371	298	241	120	291	16
Cottonwood	2938	325	190	425	350	397	391	261	184	349	66
Basswood	1243	366	163	265	262	121	28	12	9	17	...
Yellow-poplar	243	...	...	26	27	52	55	29	27	20	8
Magnolia	203	...	66	36	55	...	15	23	9	...	...
Sweetbay	1562	626	230	313	208	81	49	13	19	23	...
Willow	8073	1774	2421	857	495	551	482	604	389	459	40
Black walnut	2936	940	959	607	197	60	97	61	9	5	...
Black cherry	5795	2685	1618	794	229	265	98	37	48	20	...
American elm	14531	5746	3710	2535	942	803	249	206	189	138	13
Other elms	34914	19038	9057	4047	1482	609	291	165	122	94	8
River birch	1849	726	303	289	237	91	49	38	52	54	10
Hackberry	22255	7365	5352	3678	1573	1463	1105	786	503	405	23
Black locust	1442	716	383	211	56	39	12	25	...	...	...
Other locusts	3655	713	1110	898	452	278	97	21	34	46	7
Sassafras	1455	1012	339	45	25	22	...	12	...	...	...
Dogwood	1660	1552	61	47	...	...	...	...	...	...	...
Holly	4716	2524	1052	585	362	122	72	...	...	...	...
Other commercial	1336	582	513	178	29	22	...	13	...	...	...
Total hardwoods	1176057	460808	295581	176428	94053	61713	37137	21629	12763	14359	1587
All species	1851312	706725	467223	276076	164026	105781	59046	33166	18416	18951	1902

Table 34–*Volume of growing-stock trees on timberland by detailed species and diameter class, Arkansas, 1988*

		Diameter class (inches at breast height)									
Species	All classes	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet										
Shortleaf pine	3593.0	226.7	510.9	695.8	753.0	656.6	393.9	207.3	90.2	58.7	...
Loblolly pine	3982.0	314.6	483.2	512.9	583.3	583.4	471.3	392.5	279.6	344.7	16.5
Redcedar	156.2	48.8	51.0	23.2	17.7	9.5	3.6	1.8	0.5	0.3	...
Cypress	191.8	2.6	4.9	7.4	15.0	20.2	18.2	22.9	14.5	38.0	48.2
Total softwoods	7923.0	592.6	1050.0	1239.2	1369.1	1269.5	887.0	624.5	384.7	441.6	64.7
Select white oaks	1745.5	198.4	308.5	316.8	244.4	229.6	154.2	110.1	82.2	94.0	7.3
Select red oaks	908.6	57.4	99.4	119.0	129.6	112.6	95.9	80.8	69.3	126.8	18.0
Other white oaks	1243.9	134.7	189.1	209.4	155.1	144.9	117.3	86.3	59.8	120.3	27.1
Other red oaks	2399.5	137.1	265.6	327.6	331.1	317.4	303.7	231.0	172.9	267.0	46.0
Sweet pecan	48.9	3.0	3.2	3.6	2.7	3.6	2.0	2.4	5.0	16.7	6.5
Water hickory	126.4	5.9	13.1	10.9	15.6	10.3	14.1	14.6	9.9	22.1	9.7
Other hickories	984.6	155.8	183.4	180.8	154.5	126.9	75.5	45.5	24.6	33.4	4.1
Persimmon	34.2	6.9	8.4	8.9	6.6	1.3	0.8	1.3	...	...	...
Hard maple	53.3	5.8	14.3	13.0	5.2	5.9	4.1	2.3	1.1	1.6	...
Soft maple	110.9	28.4	21.6	18.9	10.5	8.6	6.4	5.1	6.3	3.3	1.8
Boxelder	32.2	4.2	6.4	4.5	4.9	3.3	4.4	1.9	1.7	0.9	...
Beech	65.3	1.7	2.1	5.1	4.6	5.0	5.9	12.5	6.3	18.0	4.1
Sweetgum	1494.7	146.6	213.0	255.6	228.3	213.5	158.7	116.3	67.4	75.2	20.0
Blackgum	309.3	31.5	41.5	46.3	45.8	39.7	40.6	23.0	15.2	21.5	4.0
Other gums/tupelos	92.0	4.0	9.7	12.3	5.2	4.1	5.7	6.4	5.1	23.1	16.5
White ash	89.7	9.3	14.8	14.5	14.6	12.8	7.6	4.8	2.2	6.2	2.8
Other ashes	222.3	18.9	33.3	31.4	20.9	24.4	23.6	20.8	14.4	30.2	4.3
Sycamore	87.8	2.9	4.5	8.5	9.0	10.5	9.8	9.9	6.5	23.6	2.5
Cottonwood	107.9	1.1	1.3	5.2	6.7	10.7	14.2	12.6	12.3	32.7	10.9
Basswood	15.6	0.8	0.7	2.2	4.2	2.9	1.1	0.7	0.6	2.5	...
Yellow-poplar	11.4	...	...	0.5	0.5	1.6	2.1	1.4	1.4	2.5	1.4
Magnolia	3.9	...	0.5	0.3	0.9	...	0.6	1.2	0.5	...	...
Sweetbay	16.4	2.0	1.9	3.4	3.7	1.7	1.3	0.5	0.8	1.1	...
Willow	141.0	3.8	11.9	7.5	8.3	11.8	16.0	25.5	19.1	34.1	3.1
Black walnut	21.7	1.7	4.3	6.2	2.9	1.3	2.7	2.0	0.4	0.2	...
Black cherry	41.1	7.2	8.5	7.6	4.3	5.9	2.9	1.4	1.9	1.4	...
American elm	120.3	12.7	19.1	22.9	13.8	17.3	7.7	7.3	8.5	9.6	1.5
Other elms	190.2	40.4	44.2	39.4	23.4	13.5	8.5	6.9	5.8	6.9	1.2
River birch	22.9	2.5	2.5	3.5	4.2	2.1	1.1	1.4	2.0	2.6	0.9
Hackberry	246.9	14.5	26.9	34.7	22.3	31.4	34.1	30.4	23.7	26.1	2.6
Black locust	7.2	1.1	1.8	1.8	0.7	0.7	0.3	0.7	...	...	...
Other locusts	35.2	1.6	5.0	7.5	7.1	5.4	2.3	0.6	1.7	2.9	1.2
Sassafras	5.1	2.2	1.6	0.4	0.2	0.4	...	0.3	...	...	...
Dogwood	3.0	2.5	0.2	0.3	...	...	...	...	...	...	...
Holly	23.6	4.3	5.3	5.2	4.7	2.4	1.8	...	...	...	...
Other commercial	5.6	1.5	2.0	1.1	0.3	0.3	...	0.4	...	...	...
Total hardwoods	11068.1	1052.7	1569.6	1736.9	1496.9	1383.8	1127.1	868.3	628.6	1006.5	197.7
All species	18991.1	1645.3	2619.7	2976.1	2865.9	2653.3	2014.1	1492.8	1013.3	1448.1	262.4

Table 35–*Volume of growing stock in the saw-log portion of sawtimber trees on timberland by detailed species and diameter class, Arkansas, 1988*

		Diameter class (inches at breast height)							
Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet								
Shortleaf pine	2508.8	582.9	666.2	589.0	352.7	187.3	79.3	51.4	...
Loblolly pine	2755.5	406.4	500.0	513.4	418.4	349.2	249.7	303.9	14.5
Redcedar	47.6	18.6	15.3	8.4	2.9	1.7	0.5	0.2	...
Cypress	164.9	4.9	11.5	17.3	16.0	21.1	13.6	35.4	45.0
Total softwoods	5476.8	1012.9	1193.1	1128.0	790.0	559.3	343.0	391.1	59.5
Select white oaks	757.9	...	184.8	191.8	130.2	93.0	71.3	79.9	6.8
Select red oaks	533.5	...	98.3	94.9	82.5	70.8	61.2	109.6	16.2
Other white oaks	599.5	...	121.0	122.9	100.6	73.7	51.9	104.8	24.6
Other red oaks	1398.9	...	247.5	265.5	262.0	200.8	150.1	231.9	41.2
Sweet pecan	34.3	...	2.2	3.2	1.7	2.0	4.3	14.7	6.2
Water hickory	81.1	...	11.6	8.6	12.4	12.5	9.0	18.8	8.2
Other hickories	381.4	...	119.0	106.2	63.5	39.4	21.2	28.3	3.8
Persimmon	8.2	...	5.2	1.1	0.7	1.2	...	...	...
Hard maple	16.2	...	4.1	4.5	3.6	1.9	0.9	1.2	...
Soft maple	33.9	...	7.7	6.7	5.2	4.4	5.6	2.7	1.6
Boxelder	13.1	...	3.4	2.7	3.4	1.6	1.3	0.8	...
Beech	47.4	...	3.1	4.0	5.3	10.4	5.3	15.9	3.3
Sweetgum	723.2	...	157.2	175.3	139.0	104.2	60.4	68.0	19.0
Blackgum	161.2	...	33.8	33.1	36.2	20.8	13.9	19.4	3.9
Other gums/tupelos	56.2	...	2.9	2.9	4.5	5.1	4.3	20.7	15.7
White ash	42.2	...	11.0	10.7	6.3	4.4	2.0	5.8	2.2
Other ashes	116.7	...	15.2	18.8	20.5	18.0	13.0	27.2	4.1
Sycamore	61.9	...	6.1	8.4	8.9	9.0	5.7	21.4	2.4
Cottonwood	88.9	...	5.2	8.9	12.2	11.3	11.1	29.9	10.2
Basswood	10.3	...	3.4	2.4	1.1	0.6	0.5	2.3	...
Yellow-poplar	9.9	...	0.4	1.3	1.9	1.2	1.3	2.3	1.4
Magnolia	2.6	...	0.6	...	0.5	1.1	0.4	...	...
Sweetbay	7.2	...	2.5	1.3	1.3	0.4	0.7	0.9	...
Willow	104.4	...	5.7	9.8	14.4	23.3	17.2	31.3	2.8
Black walnut	7.5	...	2.1	1.1	2.0	1.8	0.3	0.2	...
Black cherry	15.0	...	3.4	5.1	2.5	1.3	1.4	1.3	...
American elm	53.5	...	10.9	13.2	6.4	6.4	7.1	8.3	1.2
Other elms	54.7	...	17.8	11.3	7.4	6.1	4.6	6.6	1.0
River birch	12.0	...	3.3	1.8	1.0	1.2	1.6	2.1	0.9
Hackberry	140.1	...	16.1	25.6	28.1	25.5	20.5	22.5	1.9
Black locust	2.0	...	0.5	0.6	0.2	0.7	...	...	...
Other locusts	16.4	...	4.8	4.4	1.8	0.5	1.5	2.5	1.1
Sassafras	0.7	...	0.1	0.3	...	0.3	...	...	...
Holly	6.5	...	3.4	1.7	1.4	...	...	...	...
Other commercial	0.9	...	0.2	0.3	...	0.4	...	...	...
Total hardwoods	5599.3	...	1114.5	1150.6	968.6	755.2	549.5	881.2	179.7
All species	11076.2	1012.9	2307.6	2278.6	1758.6	1314.5	892.5	1272.3	239.2

Table 36–*Volume of timber on timberland by species and class of timber, Arkansas, 1988*

Species	All live	Growing stock	Rough	Rotten
	Million cubic feet			
Shortleaf pine	3656.8	3593.0	63.2	0.6
Loblolly pine	4042.0	3982.0	59.2	0.8
Redcedar	179.0	156.2	22.6	0.1
Cypress	213.9	191.8	10.9	11.2
Total softwoods	8091.7	7923.0	155.9	12.7
Select white oaks	1911.5	1745.5	141.6	24.4
Select red oaks	1004.6	908.6	69.4	26.6
Other white oaks	1448.2	1243.9	168.9	35.4
Other red oaks	2610.7	2399.5	158.6	52.5
Sweet pecan	50.8	48.9	1.9	...
Water hickory	140.5	126.4	11.7	2.4
Other hickories	1112.1	984.6	109.4	18.1
Persimmon	41.2	34.2	7.1	...
Hard maple	63.3	53.3	8.8	1.2
Soft maple	160.3	110.9	42.5	6.9
Boxelder	50.0	32.2	15.4	2.4
Beech	91.3	65.3	11.0	15.1
Sweetgum	1594.8	1494.7	79.7	20.4
Blackgum	382.7	309.3	46.1	27.4
Other gums/tupelos	115.9	92.0	13.8	10.1
White ash	109.7	89.7	17.4	2.6
Other ashes	249.1	222.3	23.5	3.3
Sycamore	94.5	87.8	5.0	1.7
Cottonwood	110.9	107.9	2.1	0.9
Basswood	18.5	15.6	1.8	1.1
Yellow-poplar	12.1	11.4	0.7	...
Magnolia	4.8	3.9	0.8	0.2
Sweetbay	21.5	16.4	2.8	2.3
Willow	156.4	141.0	13.1	2.2
Black walnut	27.1	21.7	4.8	0.6
Black cherry	53.3	41.1	11.3	0.9
American elm	146.9	120.3	23.7	2.8
Other elms	229.8	190.2	37.1	2.5
River birch	27.2	22.9	3.9	0.4
Hackberry	295.2	246.9	44.0	4.4
Black locust	18.2	7.2	8.4	2.6
Other locusts	46.5	35.2	10.2	1.1
Sassafras	8.9	5.1	3.3	0.4
Dogwood	10.2	3.0	7.2	...
Holly	36.7	23.6	12.1	0.9
Other commercial	13.8	5.6	8.1	...
Total hardwoods	12469.0	11068.1	1127.3	273.6
Noncommercial	191.6	...	191.6	...
All species	20752.3	18991.1	1474.9	286.3

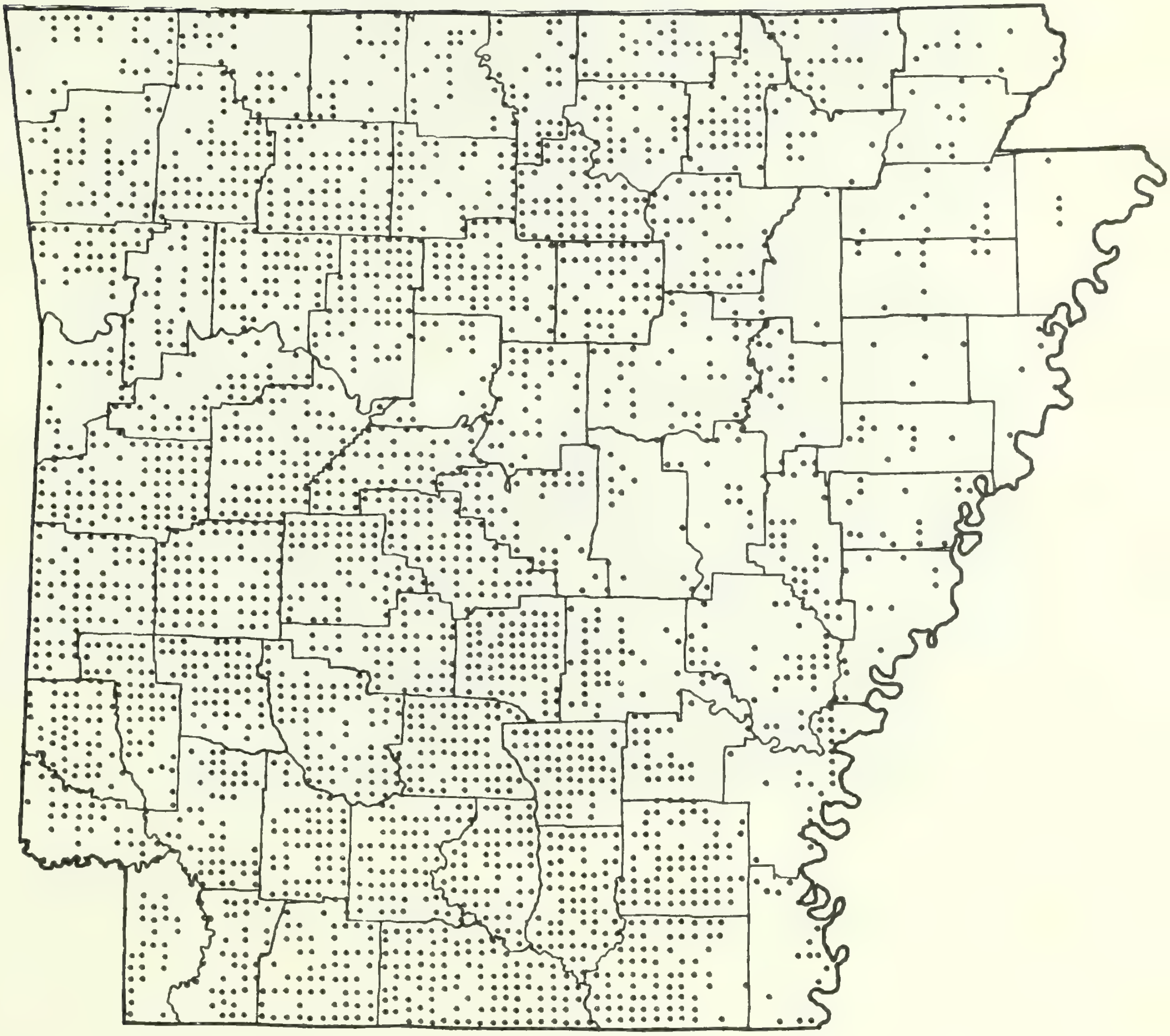

Figure 1.—*Location of Forest Inventory and Anaysis plots on timberland, Arkansas, 1988.*

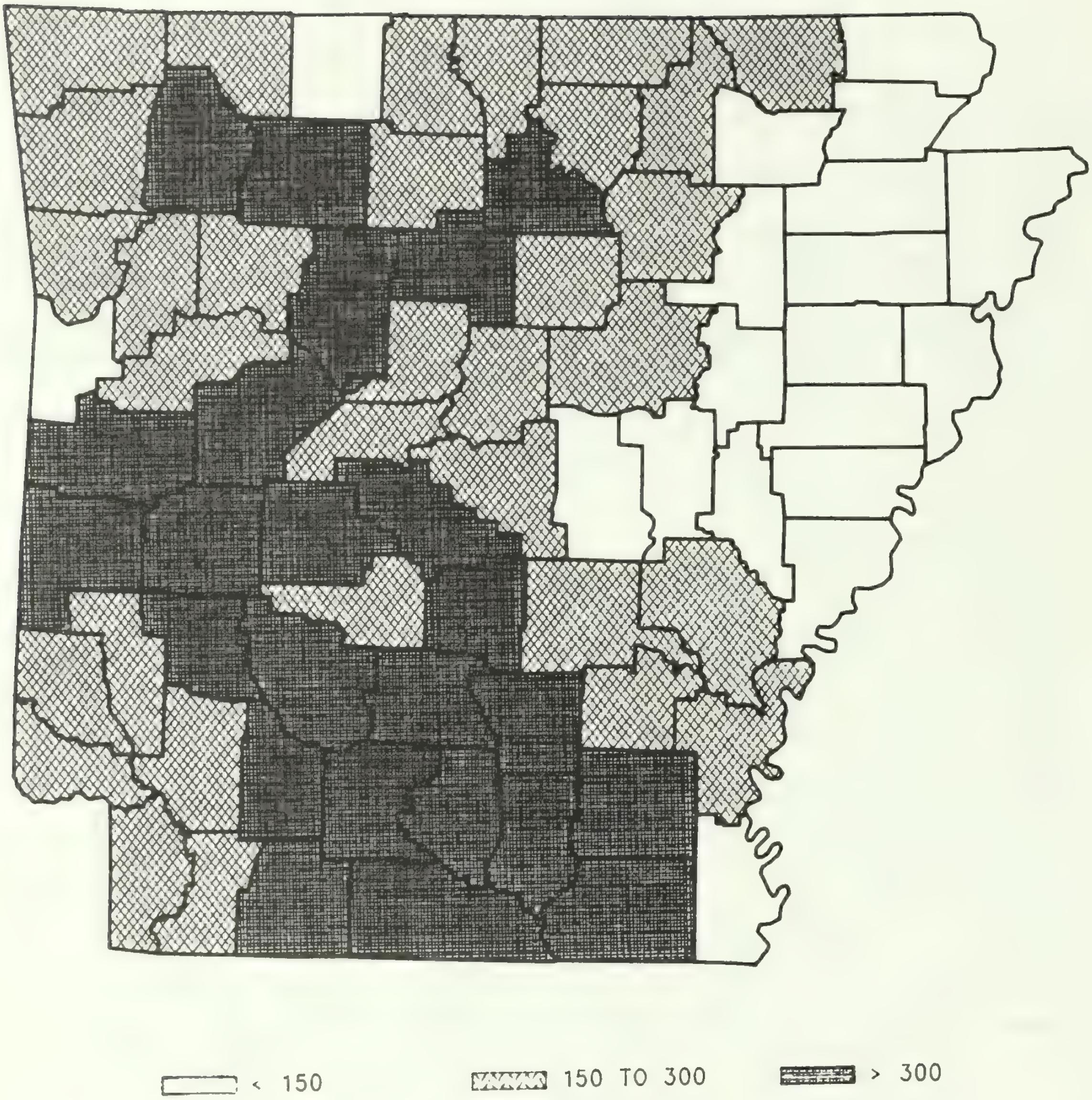

Figure 2.—*Total timberland by county in thousand acres, Arkansas, 1988.*

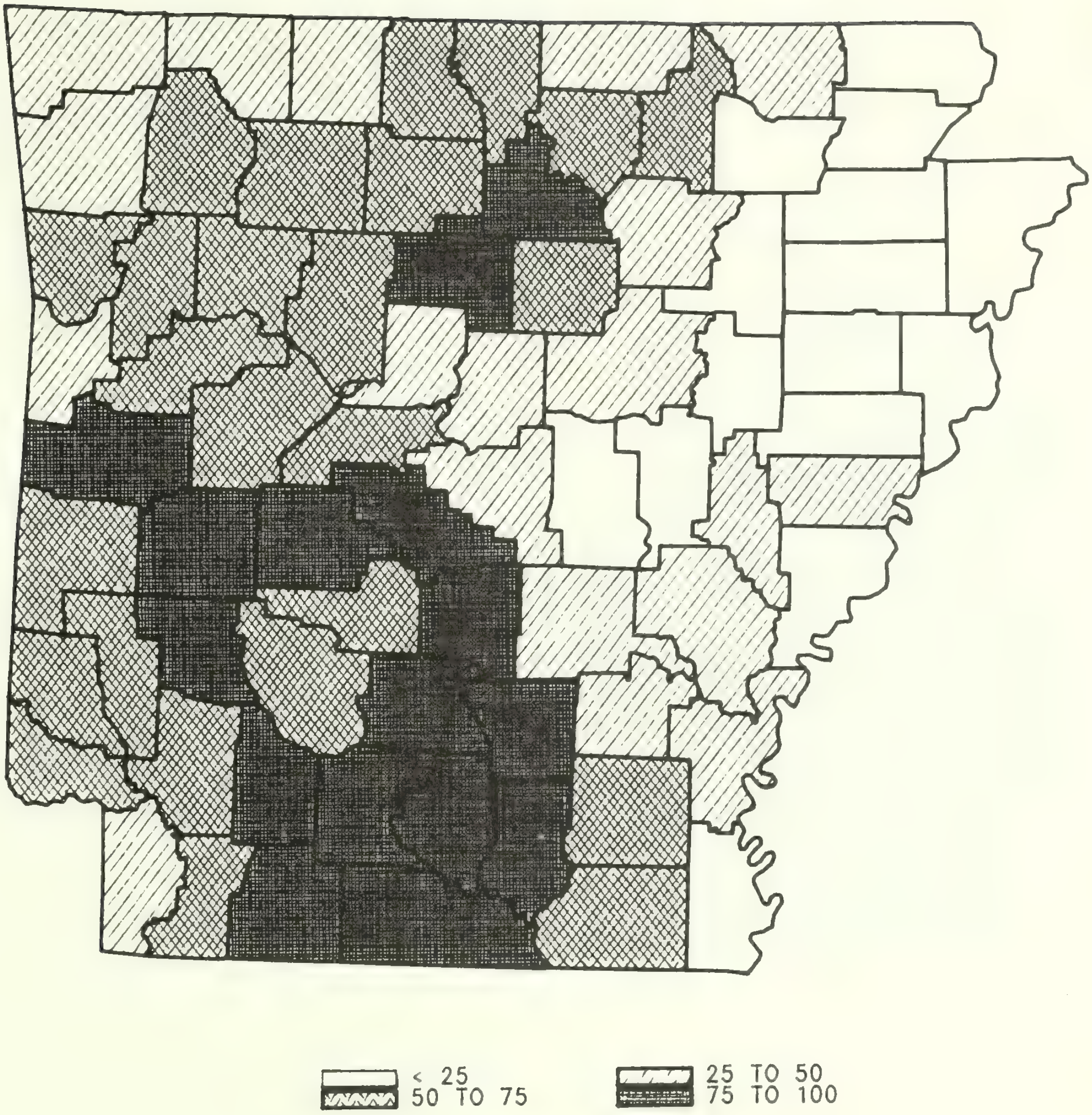

Figure 3.—*Percent timberland of total land area by county, Arkansas, 1988.*

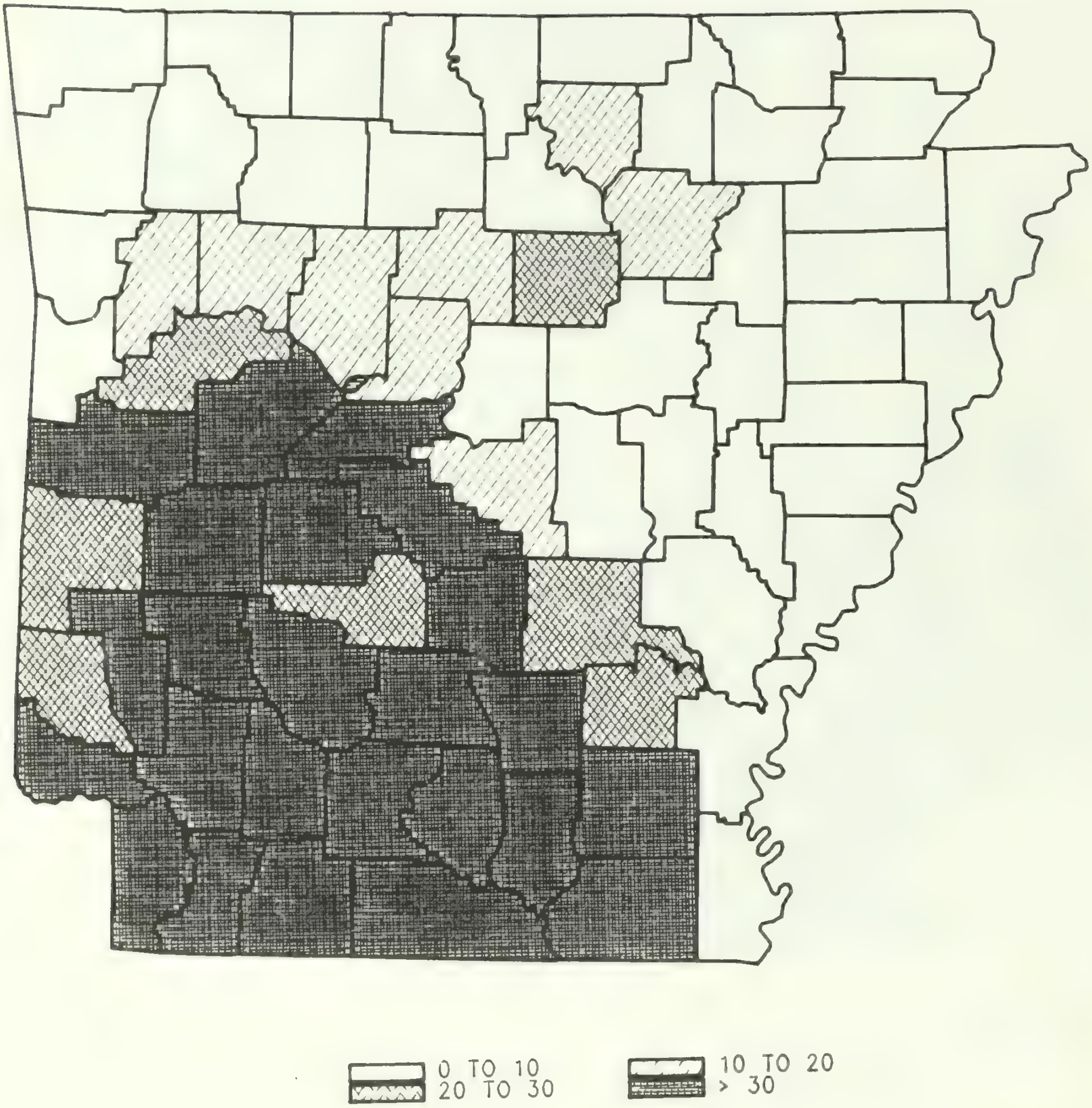

Figure 4.—*Percent timberland by county, Loblolly/Shortleaf pine forest type, Arkansas, 1988.*

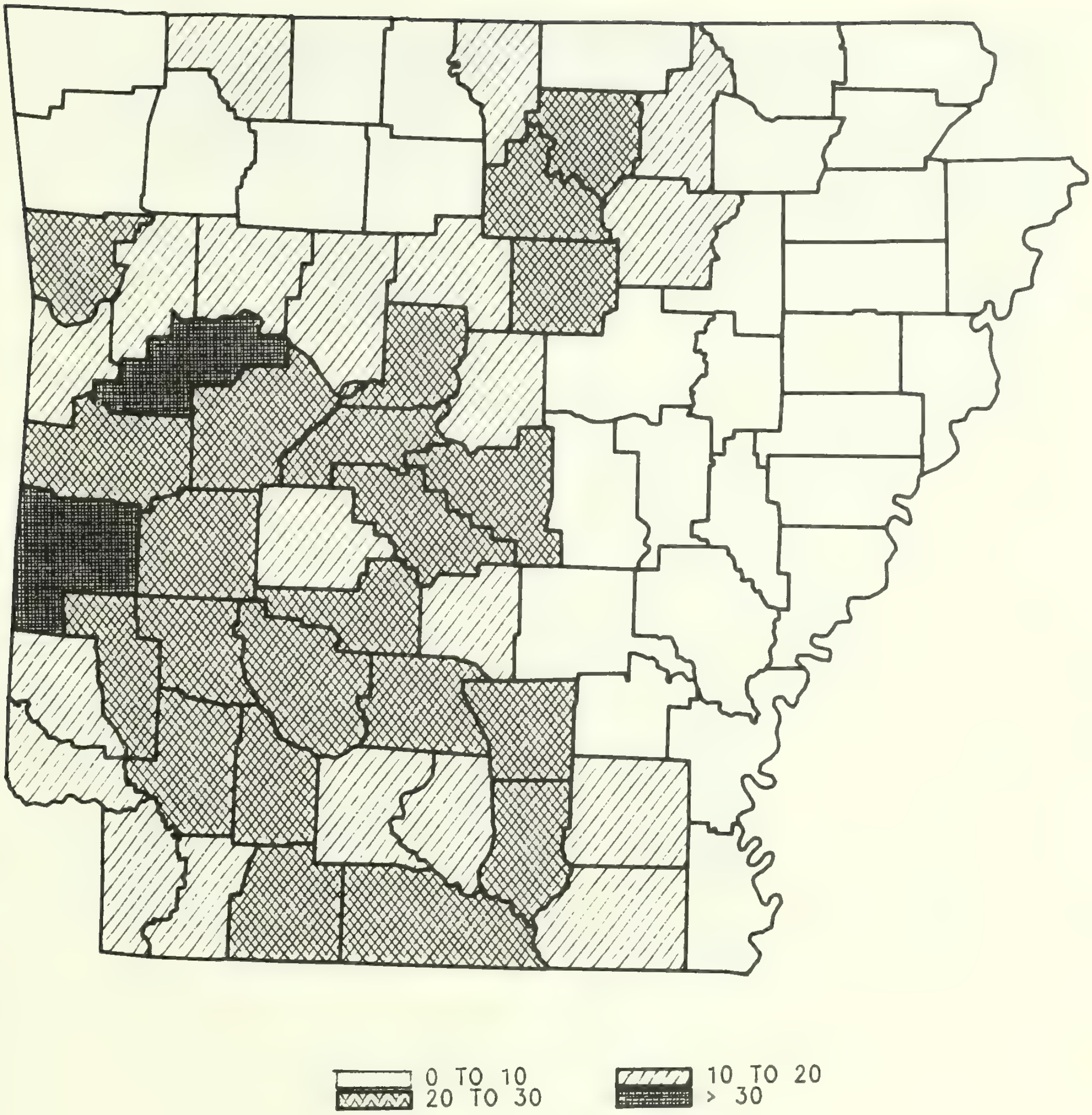

Figure 5.—*Percent timberland by county, Oak/Pine forest type, Arkansas, 1988.*

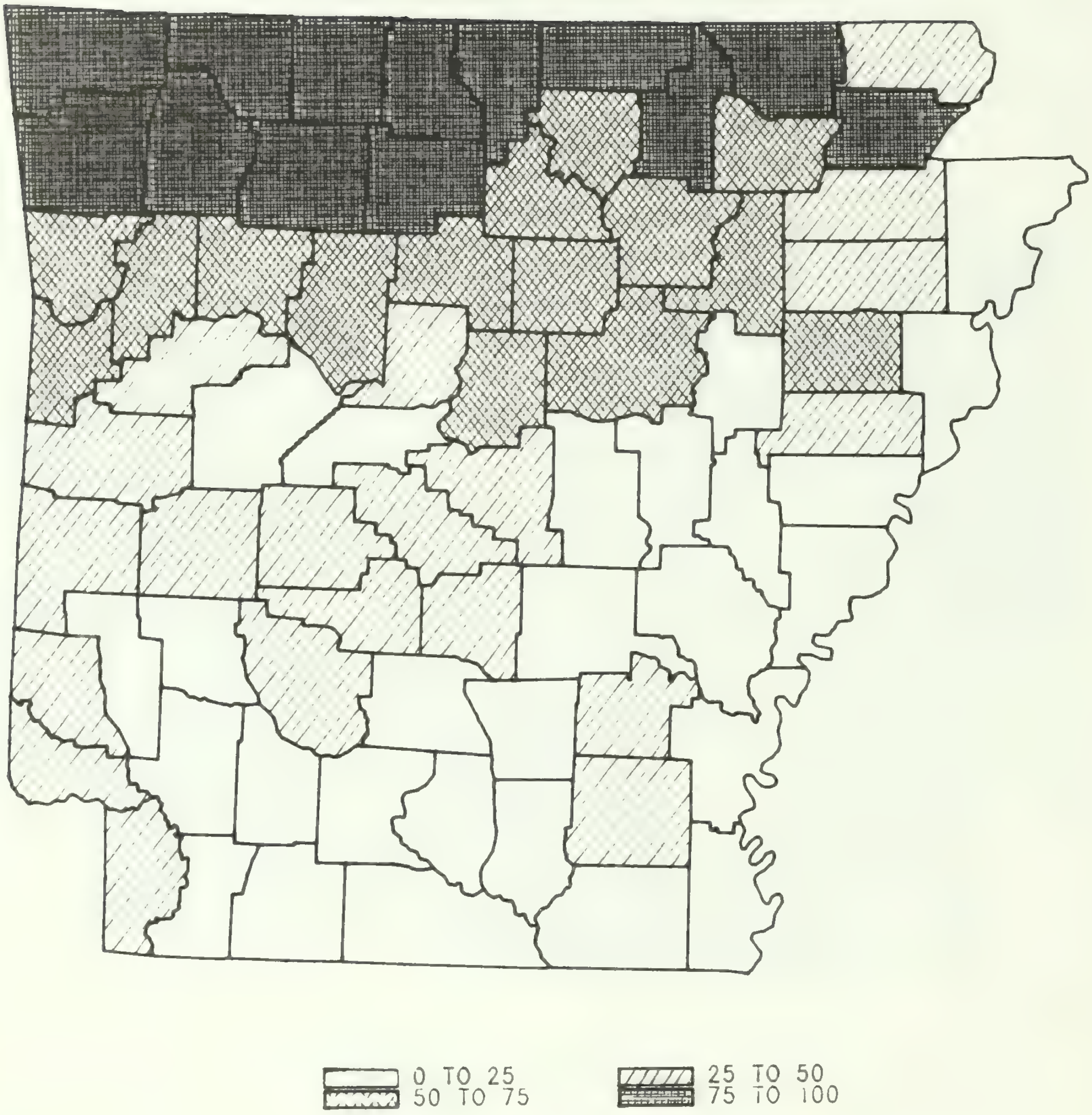

Figure 6.—*Percent timberland by county, Oak/Hickory forest type, Arkansas, 1988.*

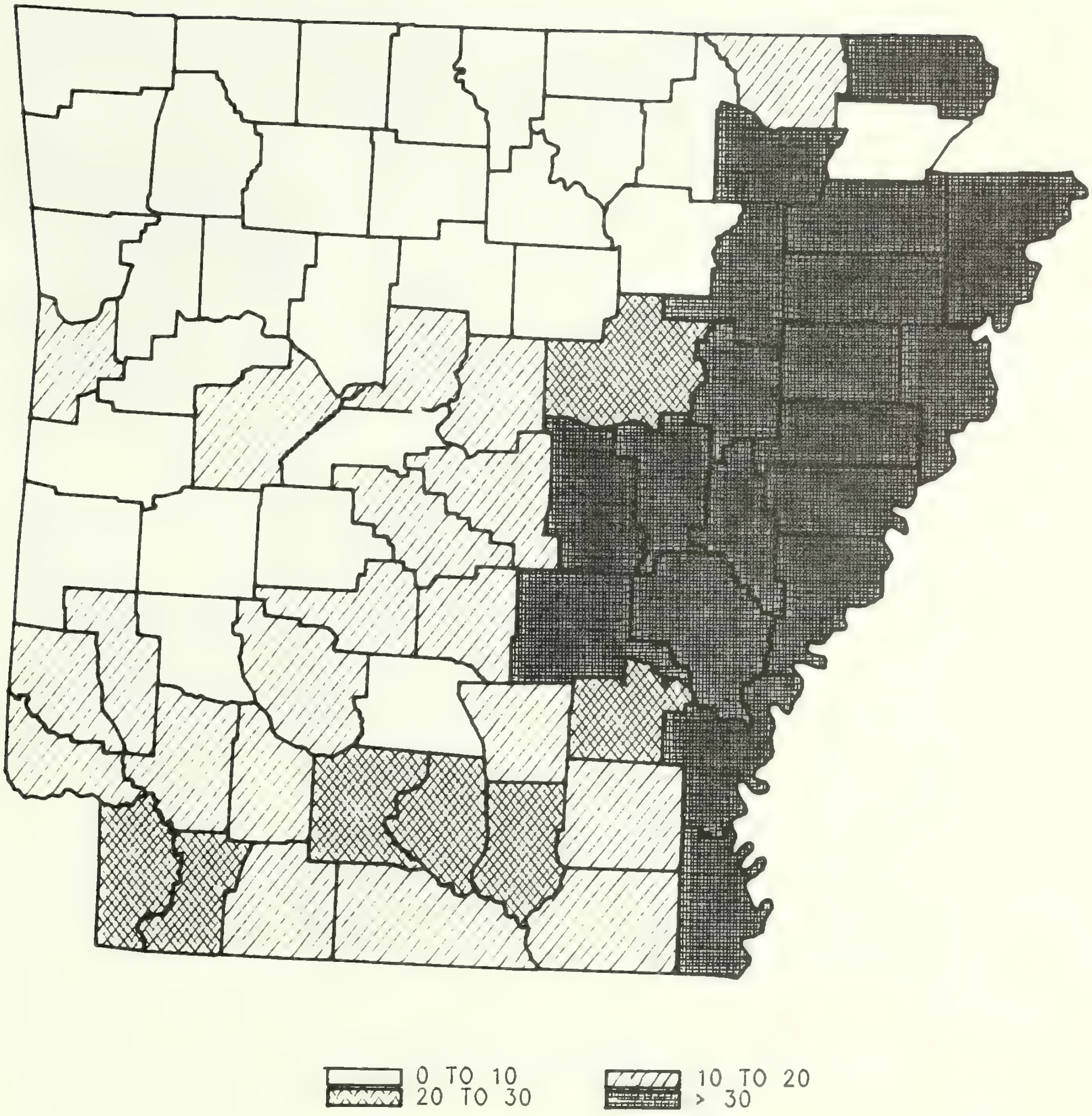

Figure 7.—*Percent timberland by county, Oak/Gum/Cypress forest type, Arkansas, 1988.*

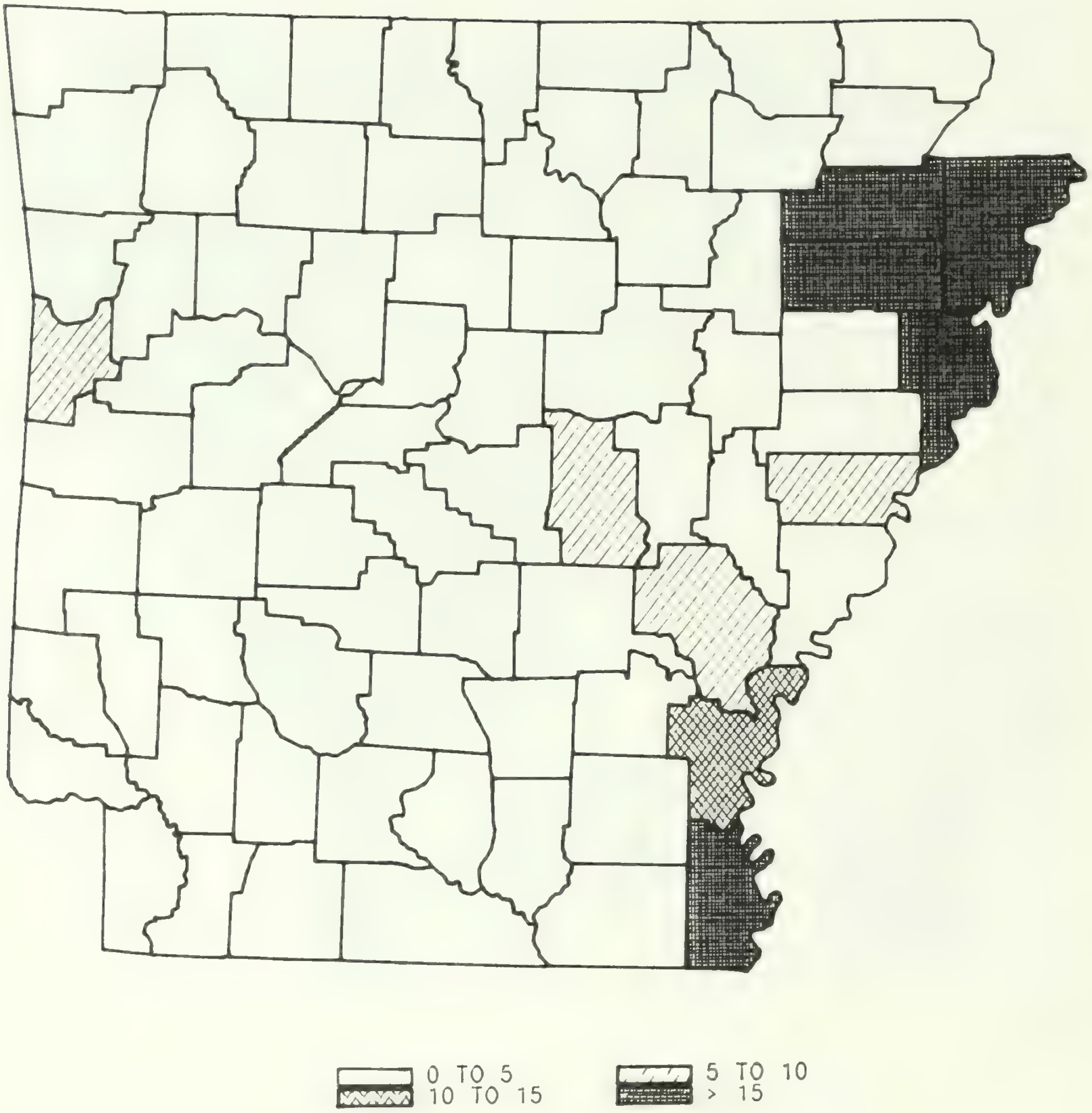

Figure 8.—*Percent timberland by county, Elm/Ash/Cottonwood forest type, Arkansas, 1988.*

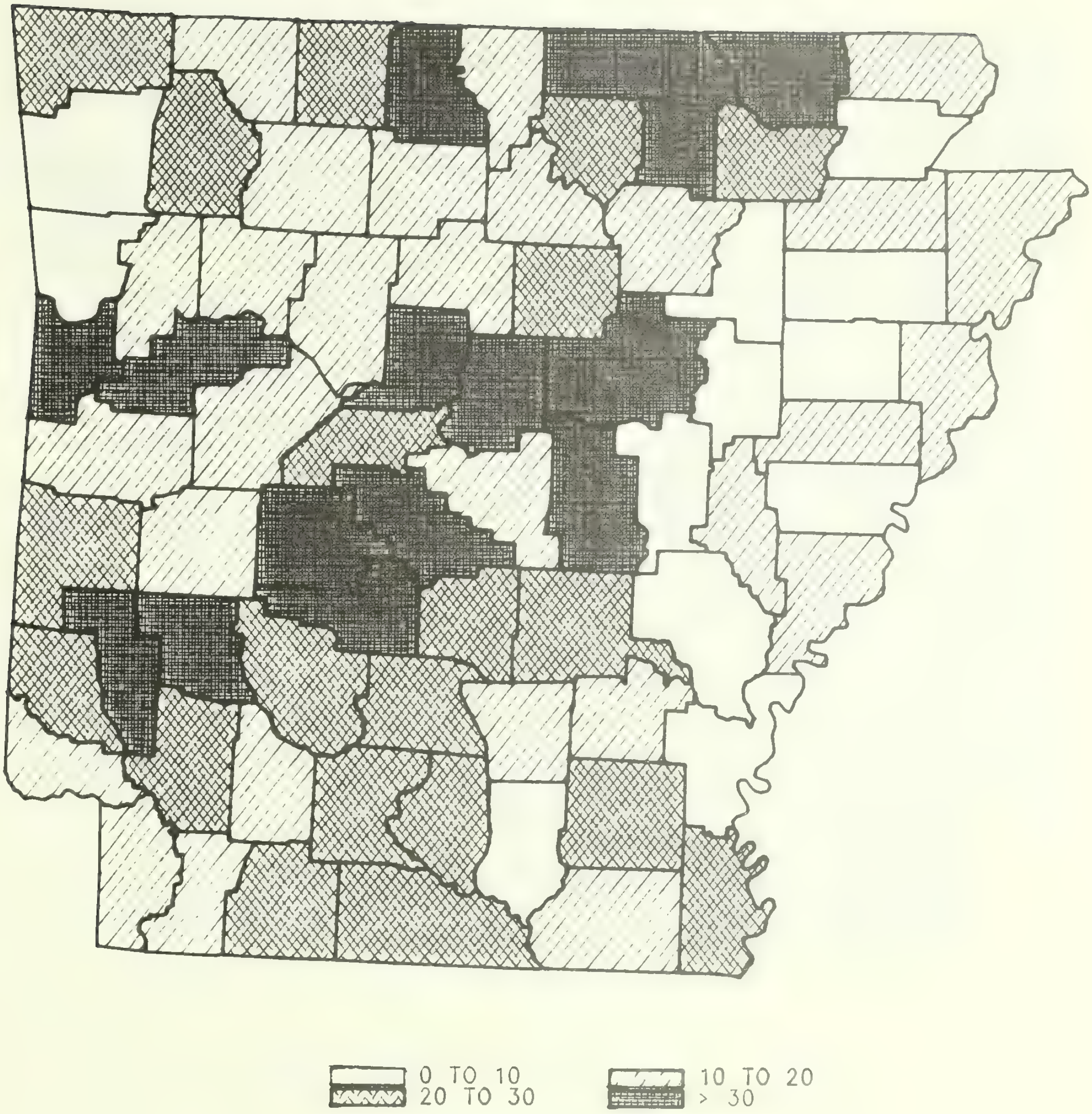

Figure 9.—*Percent timberland by county, sapling and seedling stand-size class, Arkansas, 1988.*

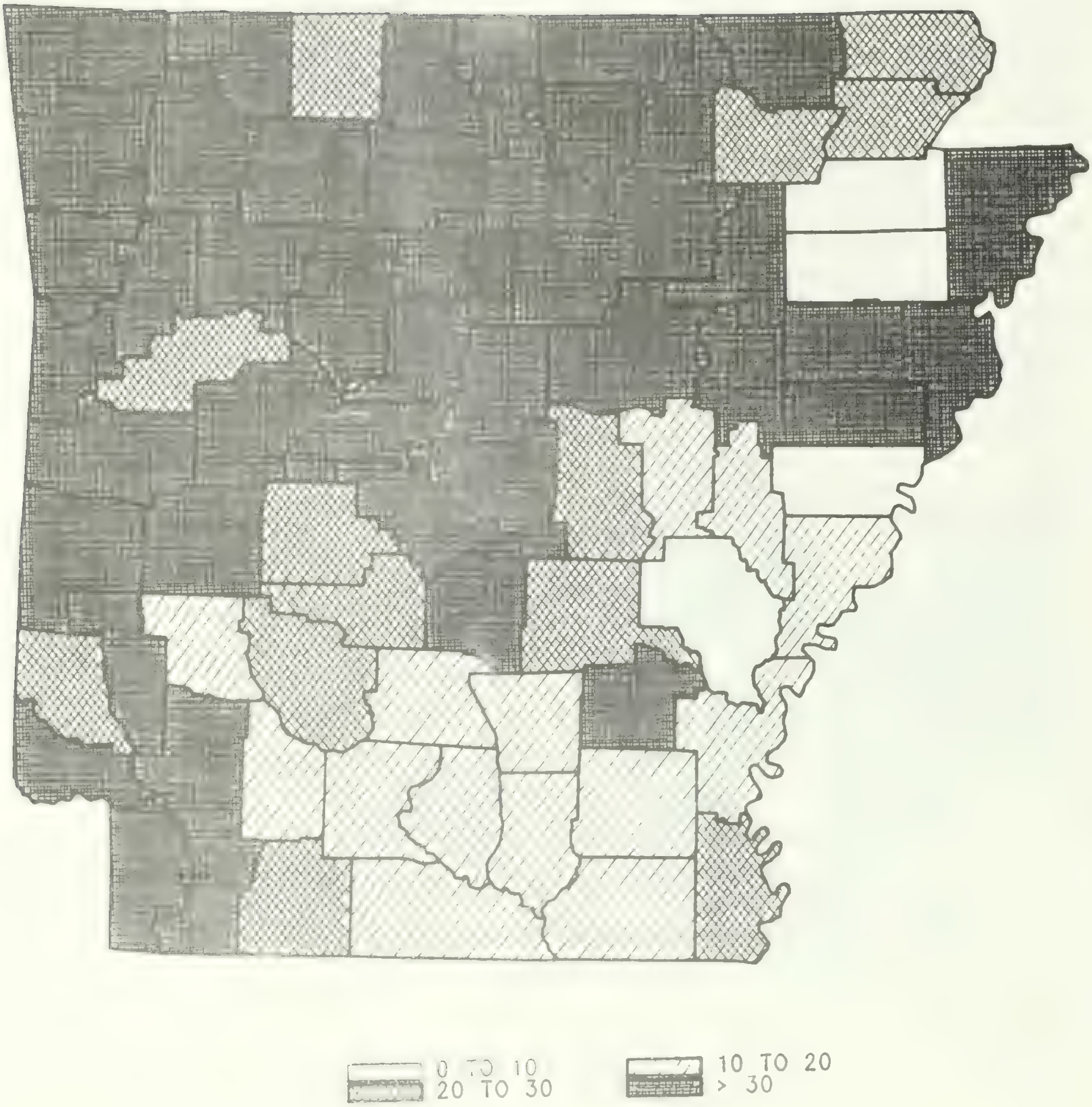

Figure 10.—*Percent timberland by county, poletimber stand-size class, Arkansas, 1988.*

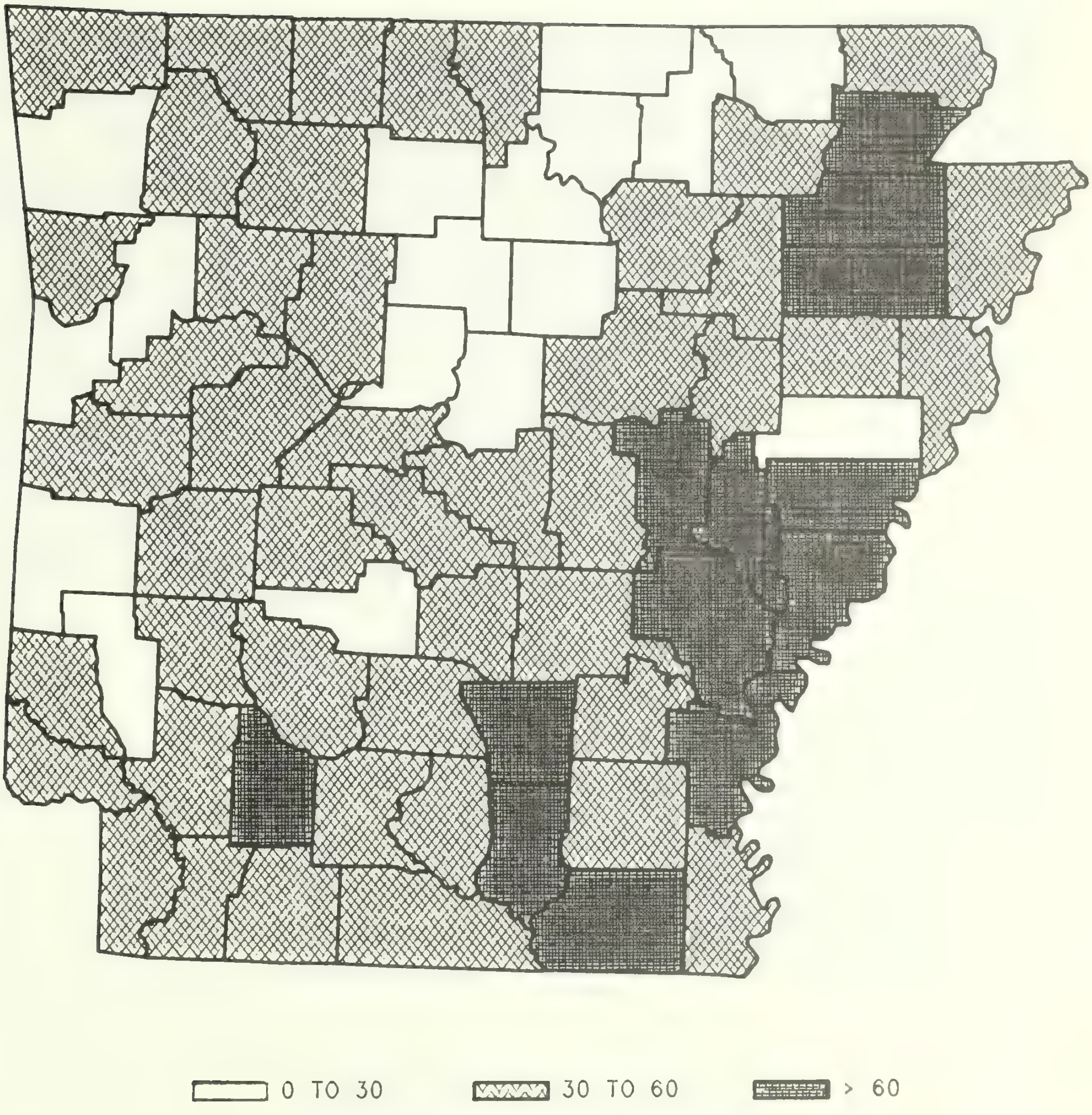

Figure 11.—*Percent timberland by county, sawtimber stand-size class, Arkansas, 1988.*

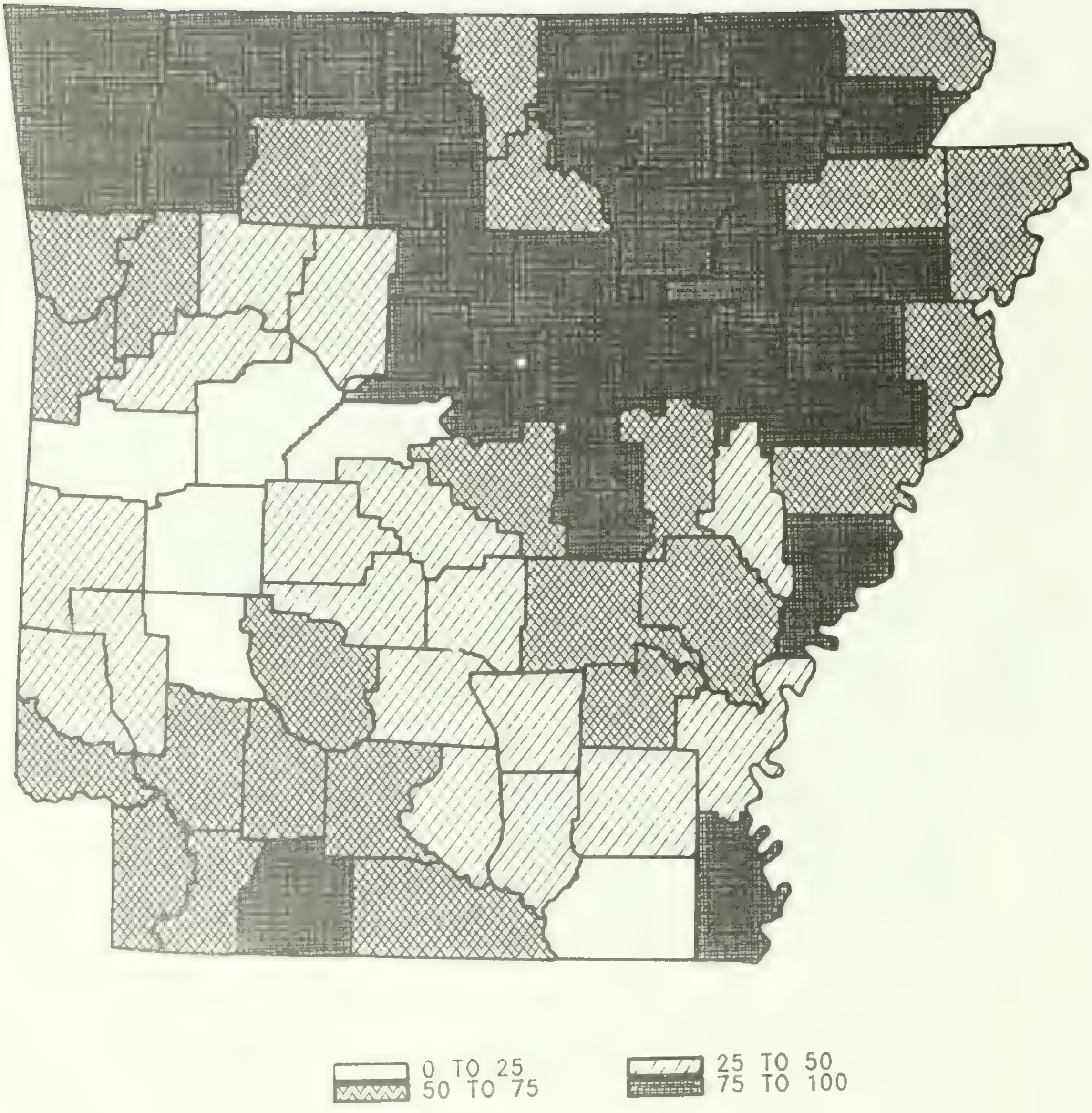

Figure 12.—*Percent timberland by county, nonindustrial private ownership class, Arkansas, 1988.*

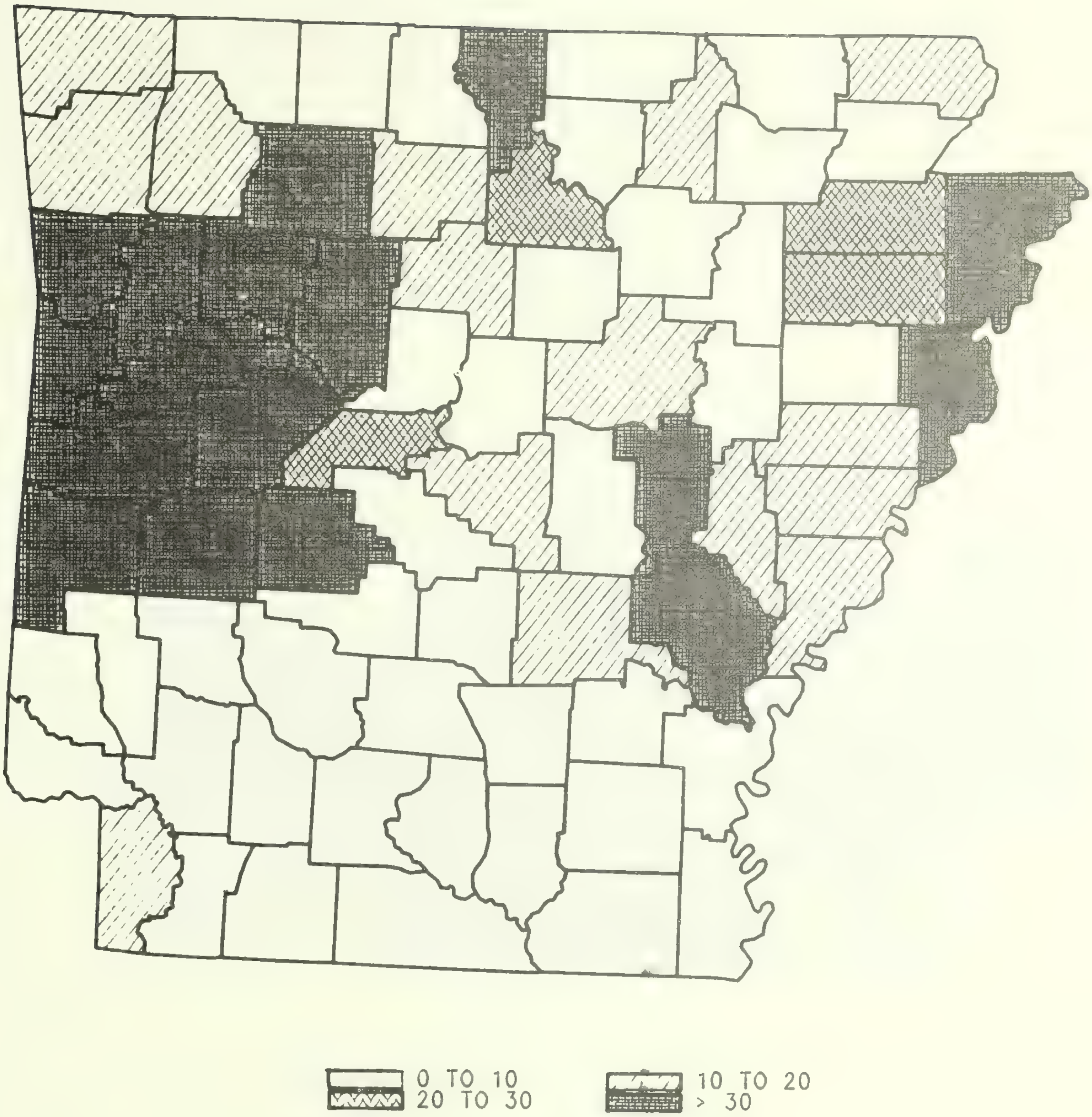

Figure 13.—*Percent timberland by county, public ownership class, Arkansas, 1988.*

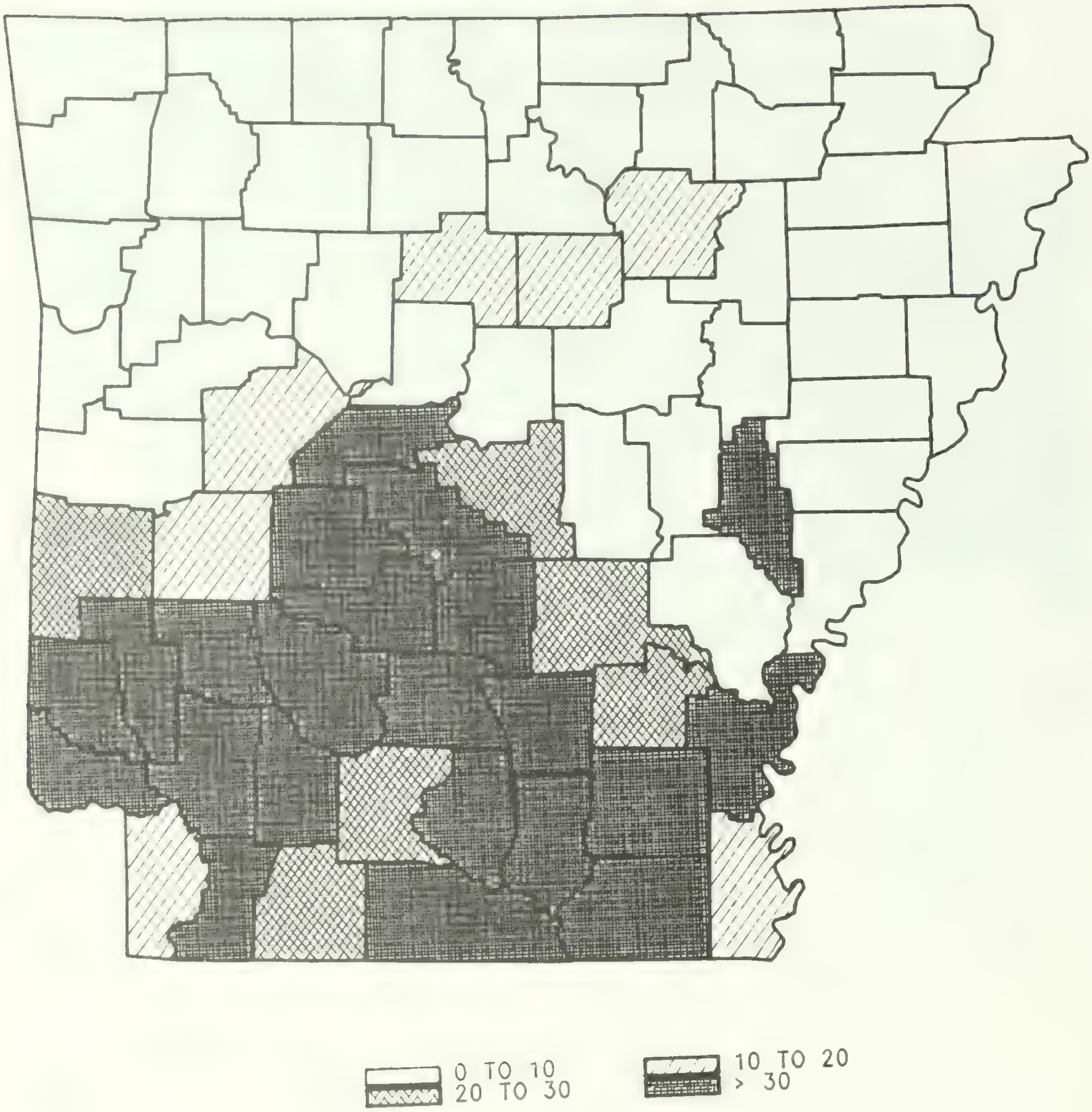

Figure 14.—*Percent timberland by county, forest industry ownership class, Arkansas, 1988.*

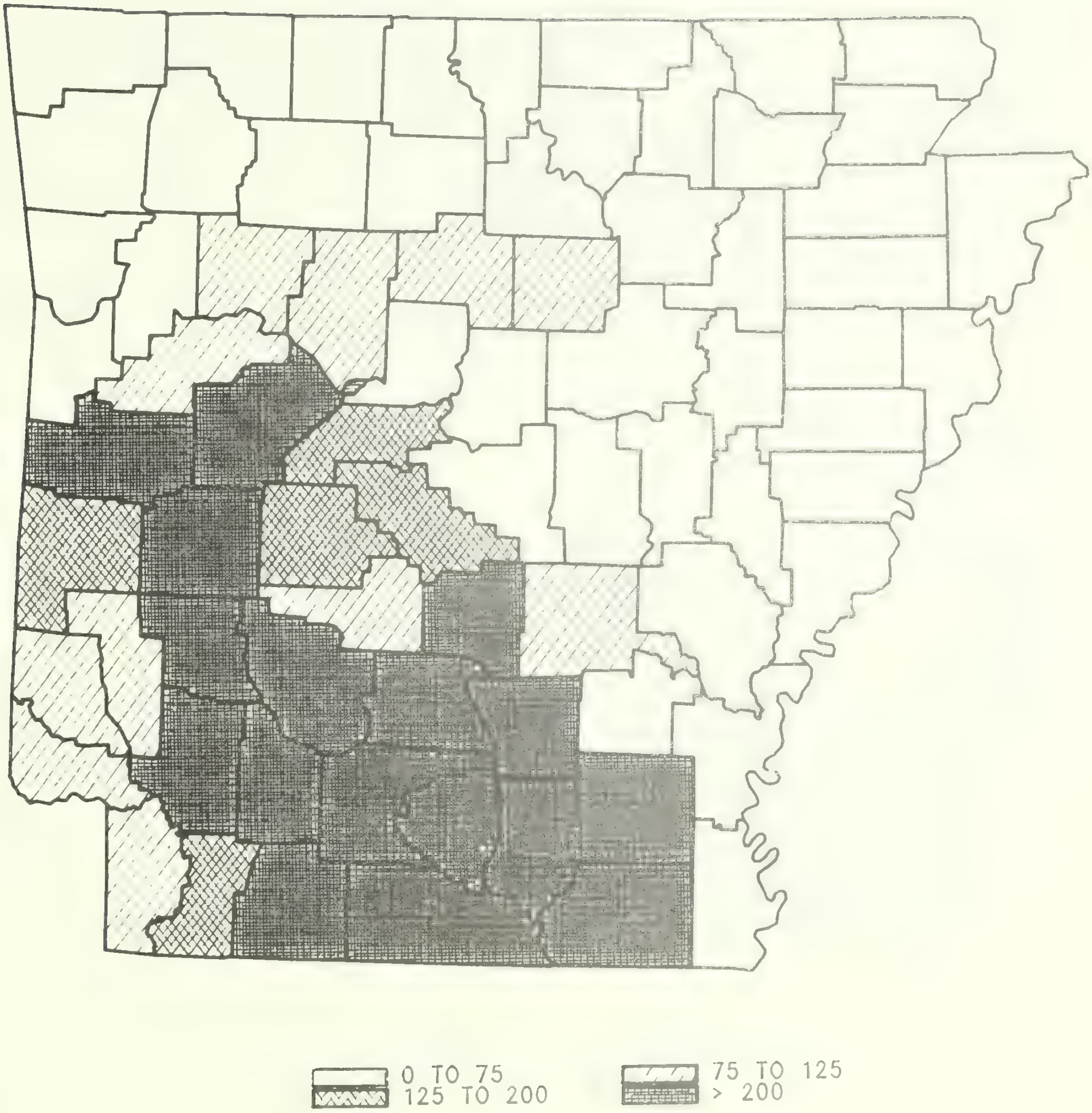

Figure 15.—*Softwood volume of growing stock by county, in million cubic feet, Arkansas, 1988.*

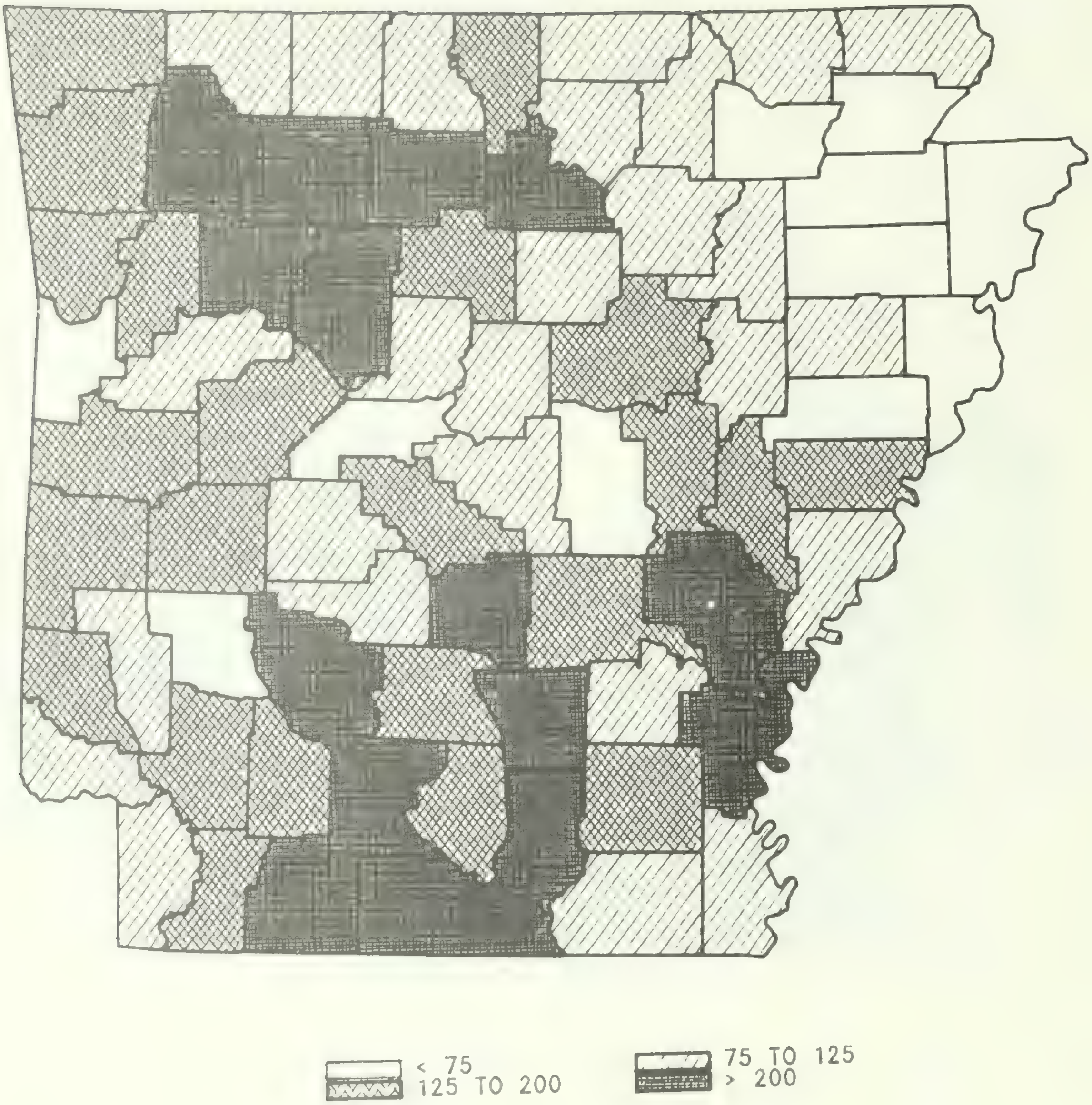

Figure 16.—*Hardwood volume of growing stock by county, in million cubic feet, Arkansas, 1988.*

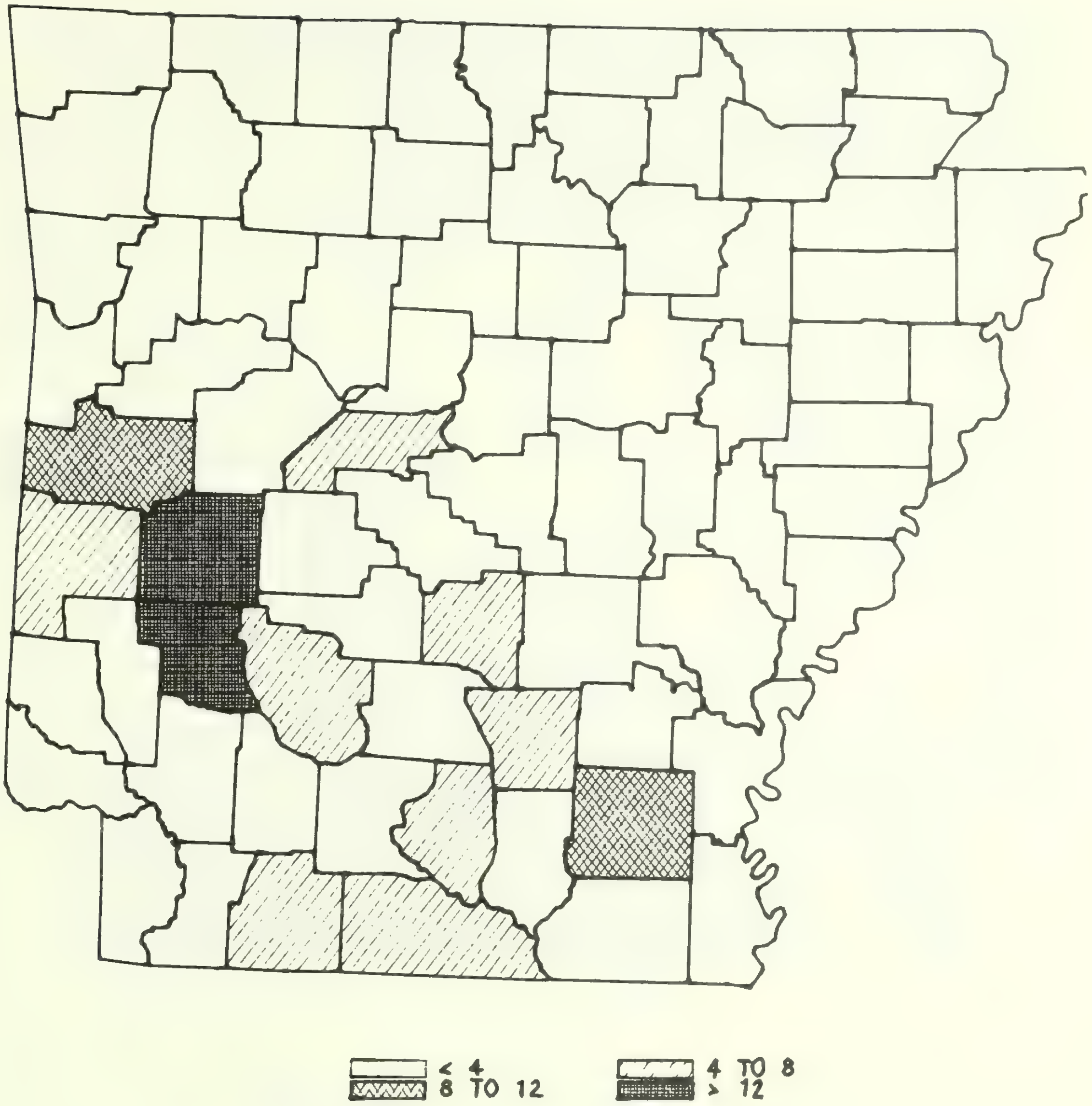

Figure 17.—*Softwood volume of rough and rotten trees by county, in million cubic feet, Arkansas, 1988.*

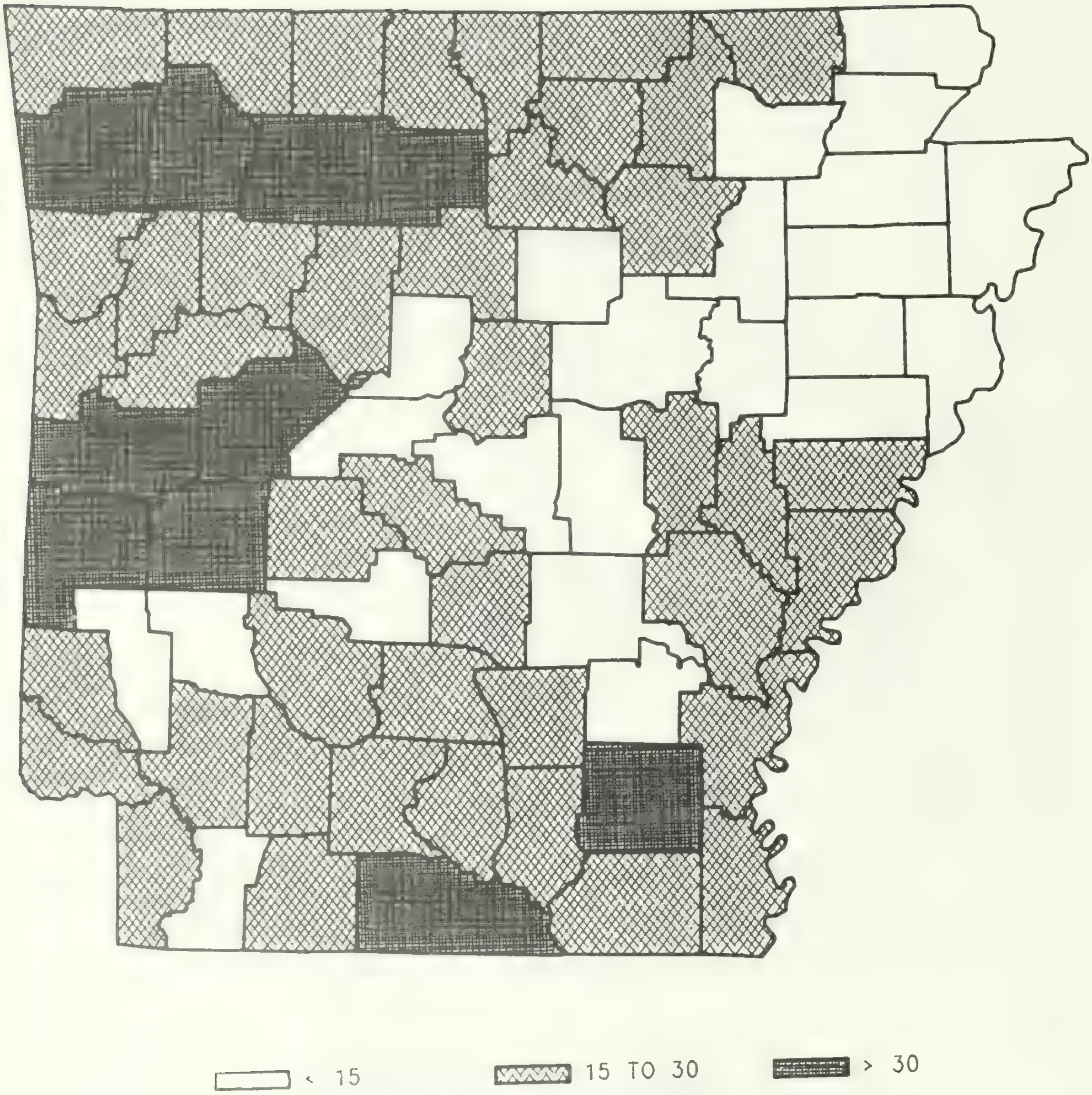

Figure 18.—*Hardwood volume of rough and rotten trees by county, in million cubic feet, Arkansas, 1988.*

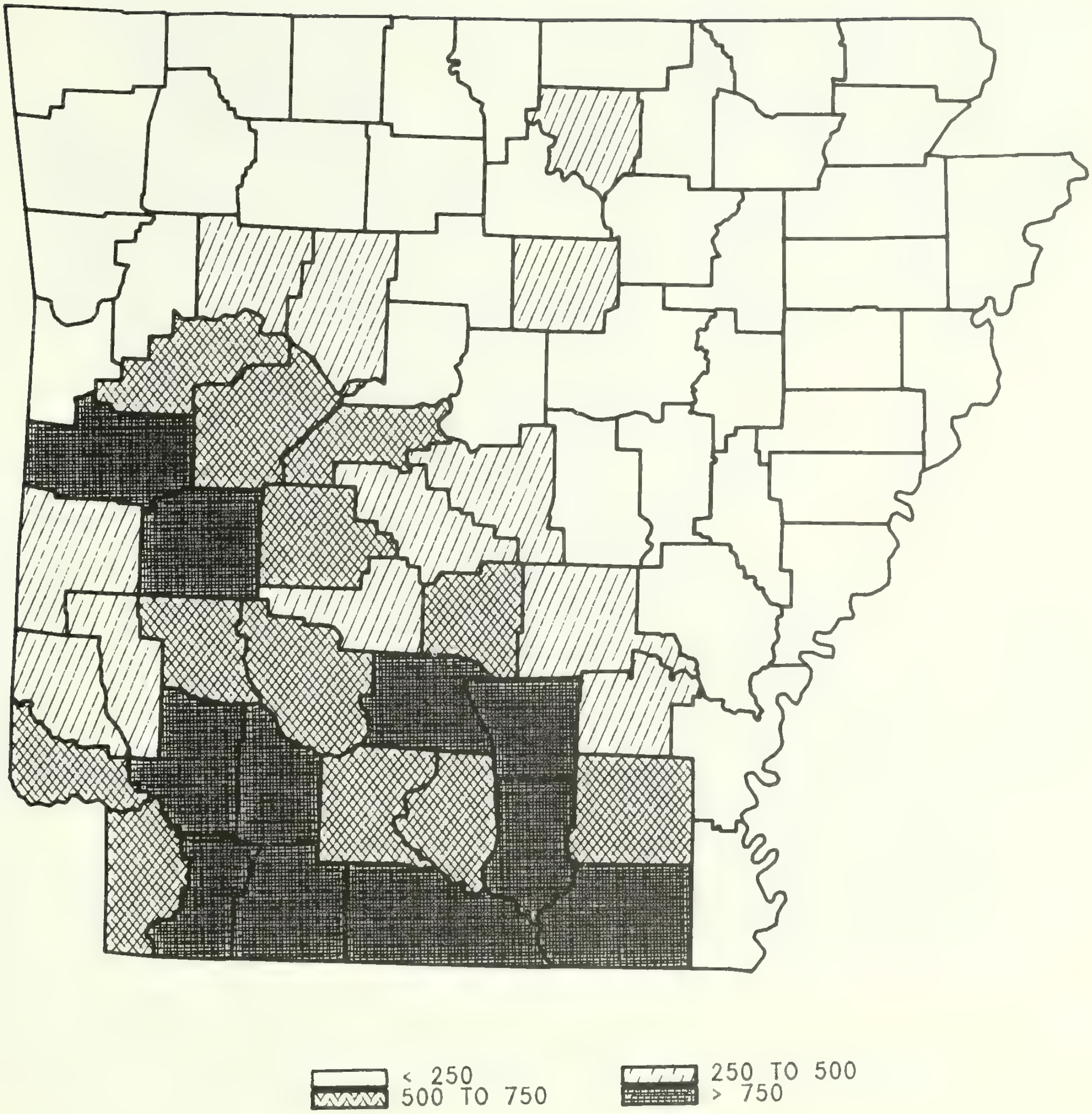

Figure 19.—*Average softwood volume of growing stock on timberland by county, in cubic feet per acre, Arkansas, 1988.*

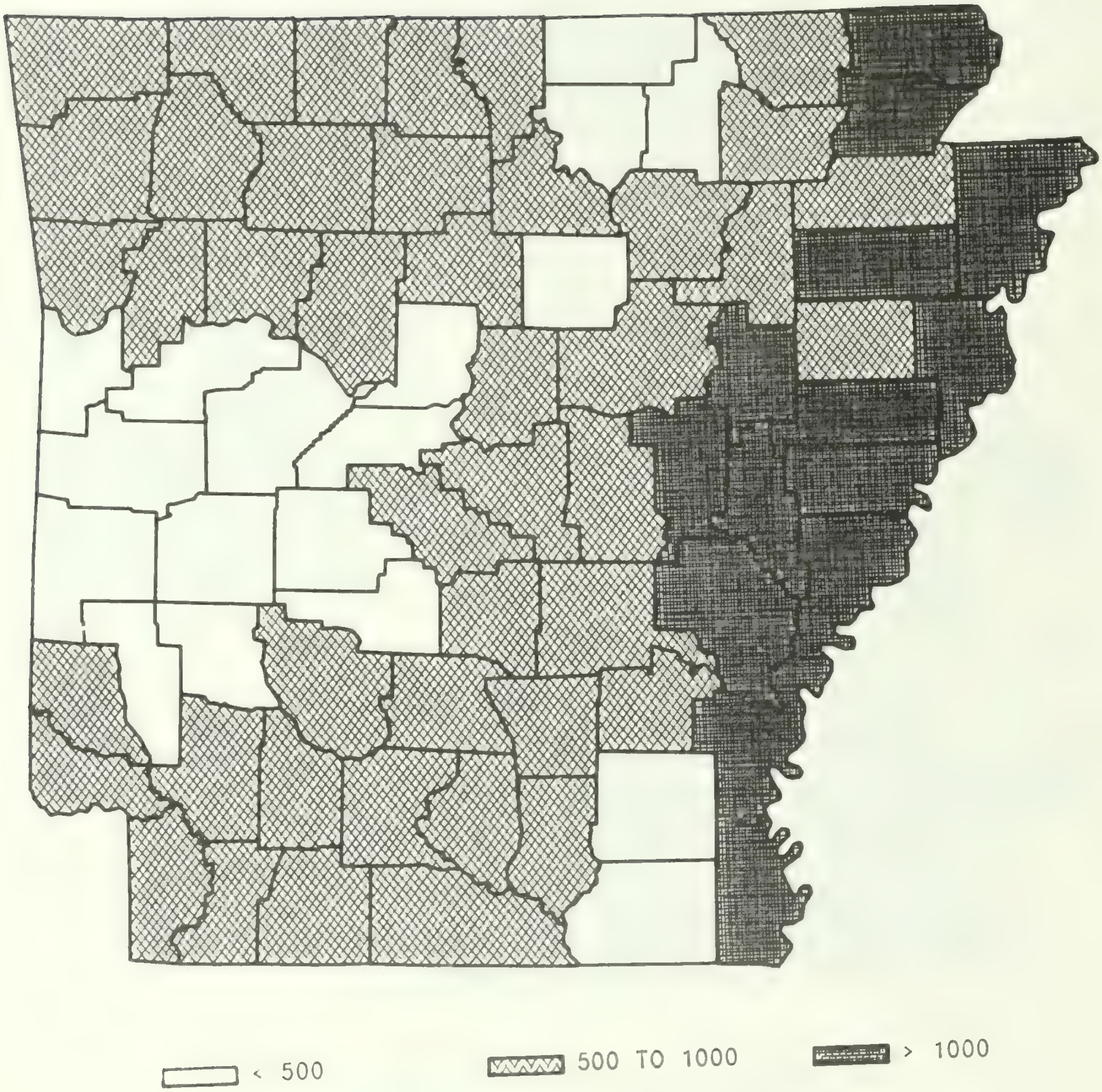

Figure 20.—*Average hardwood volume of growing stock on timberland by county, in cubic feet per acre, Arkansas, 1988.*

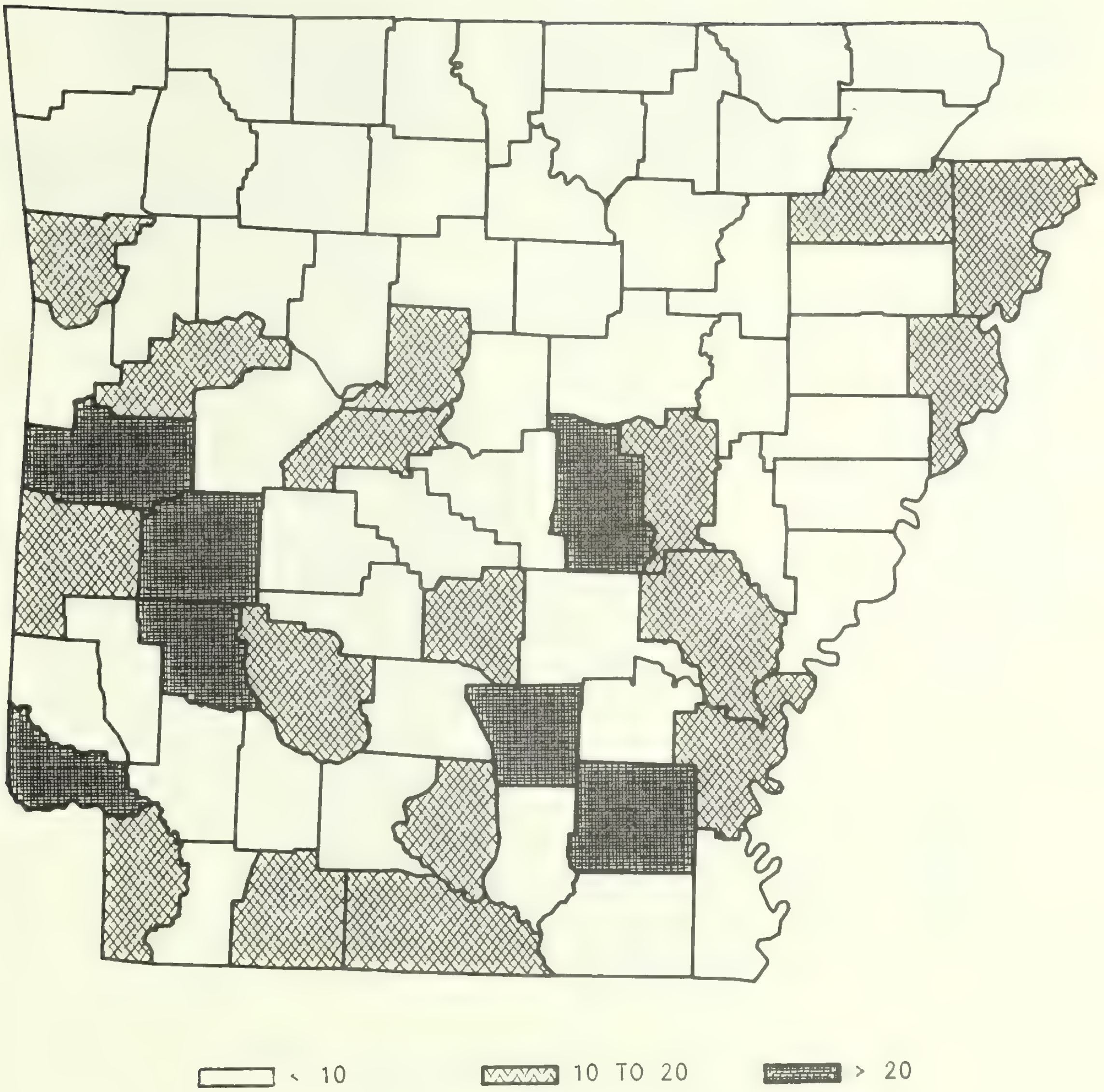

Figure 21.—*Average softwood volume of rough and rotten trees on timberland by county, in cubic feet per acre, Arkansas, 1988.*

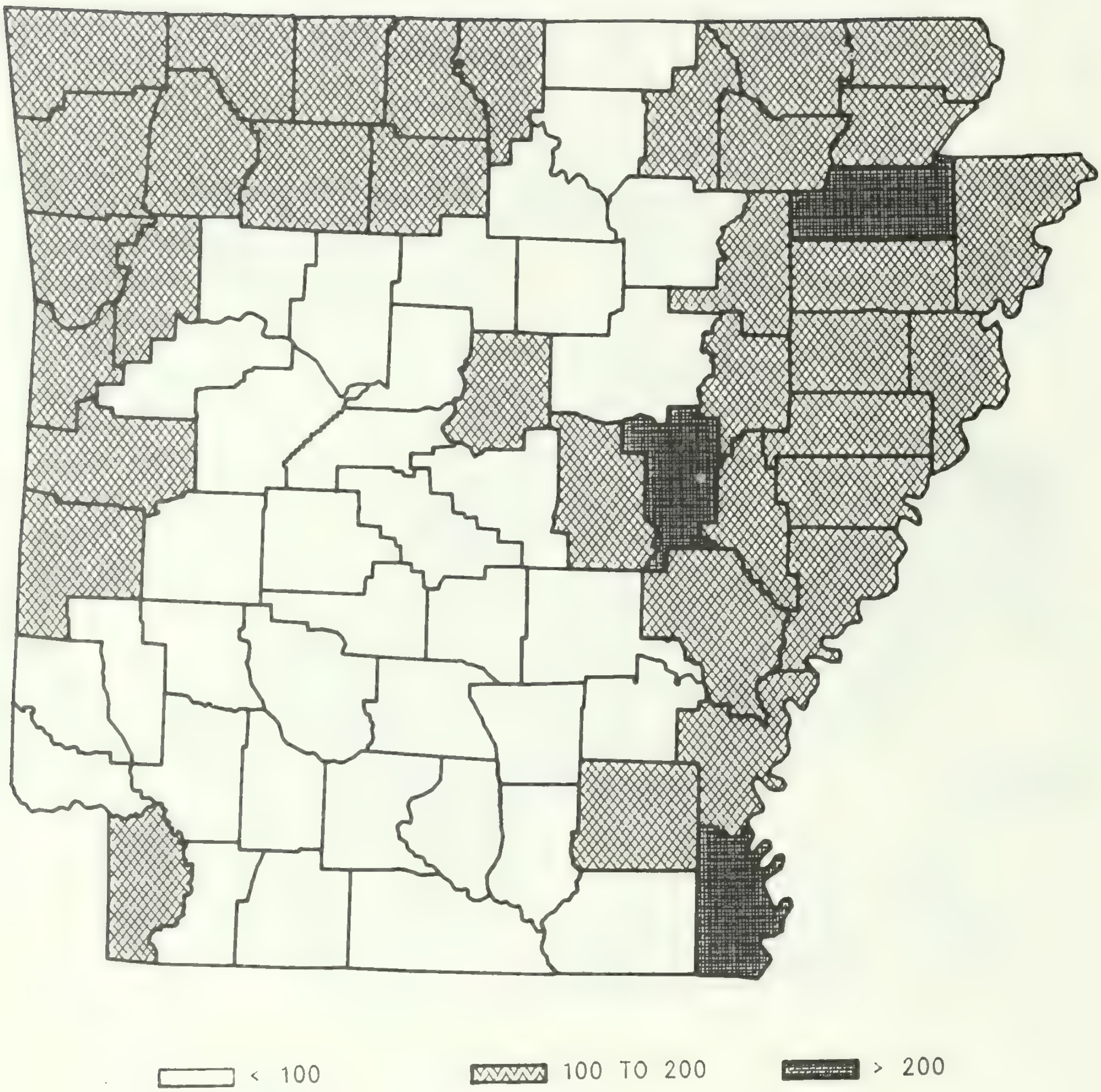

Figure 22.—*Average hardwood volume of rough and rotten trees on timberland by county, in cubic feet per acre, Arkansas, 1988.*

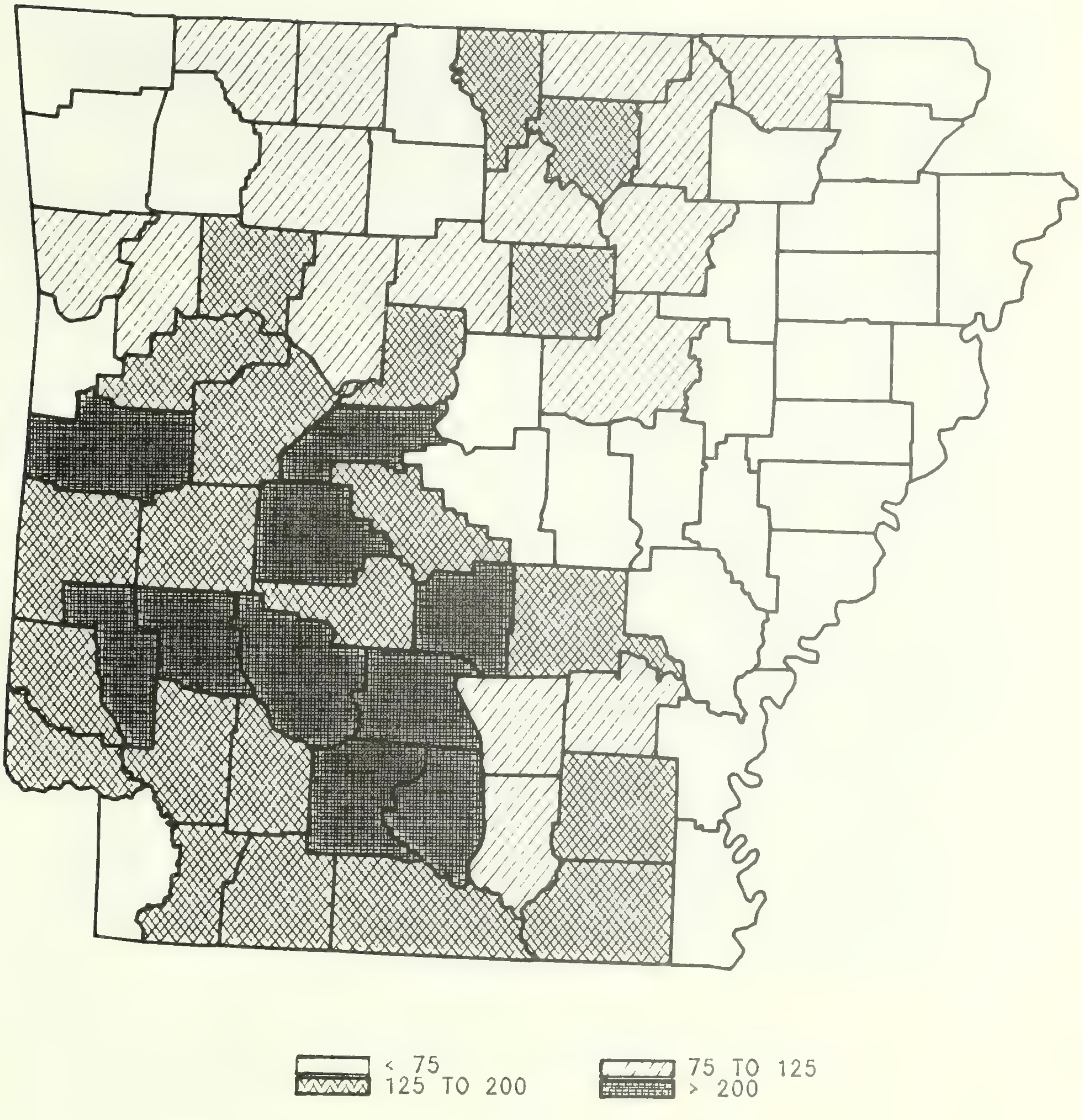

Figure 23.—*Average number of live softwood trees per acre on timberland by county, Arkansas, 1988.*

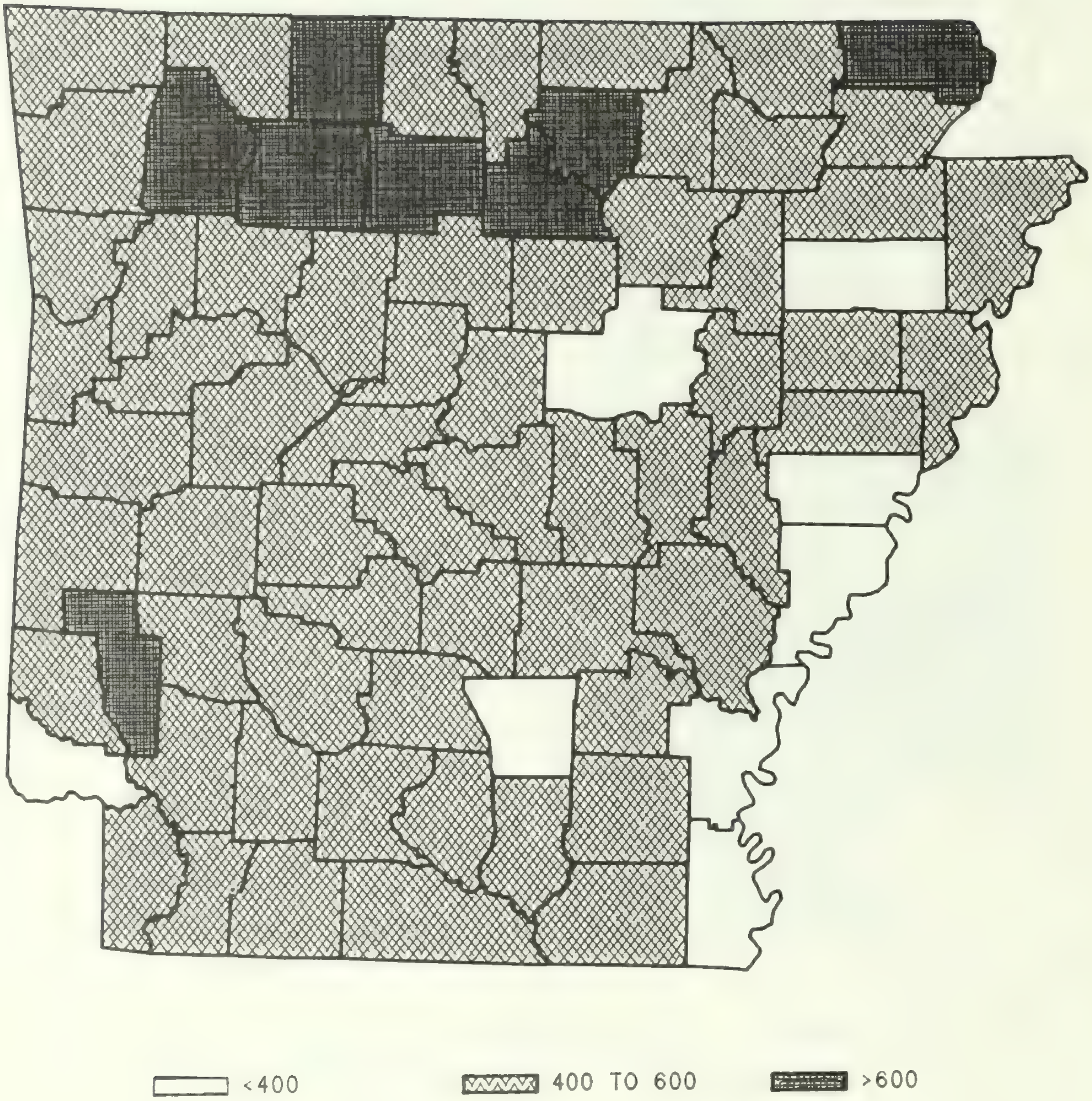

Figure 24.—*Average number of live hardwood trees per acre on timberland by county, Arkansas, 1988.*

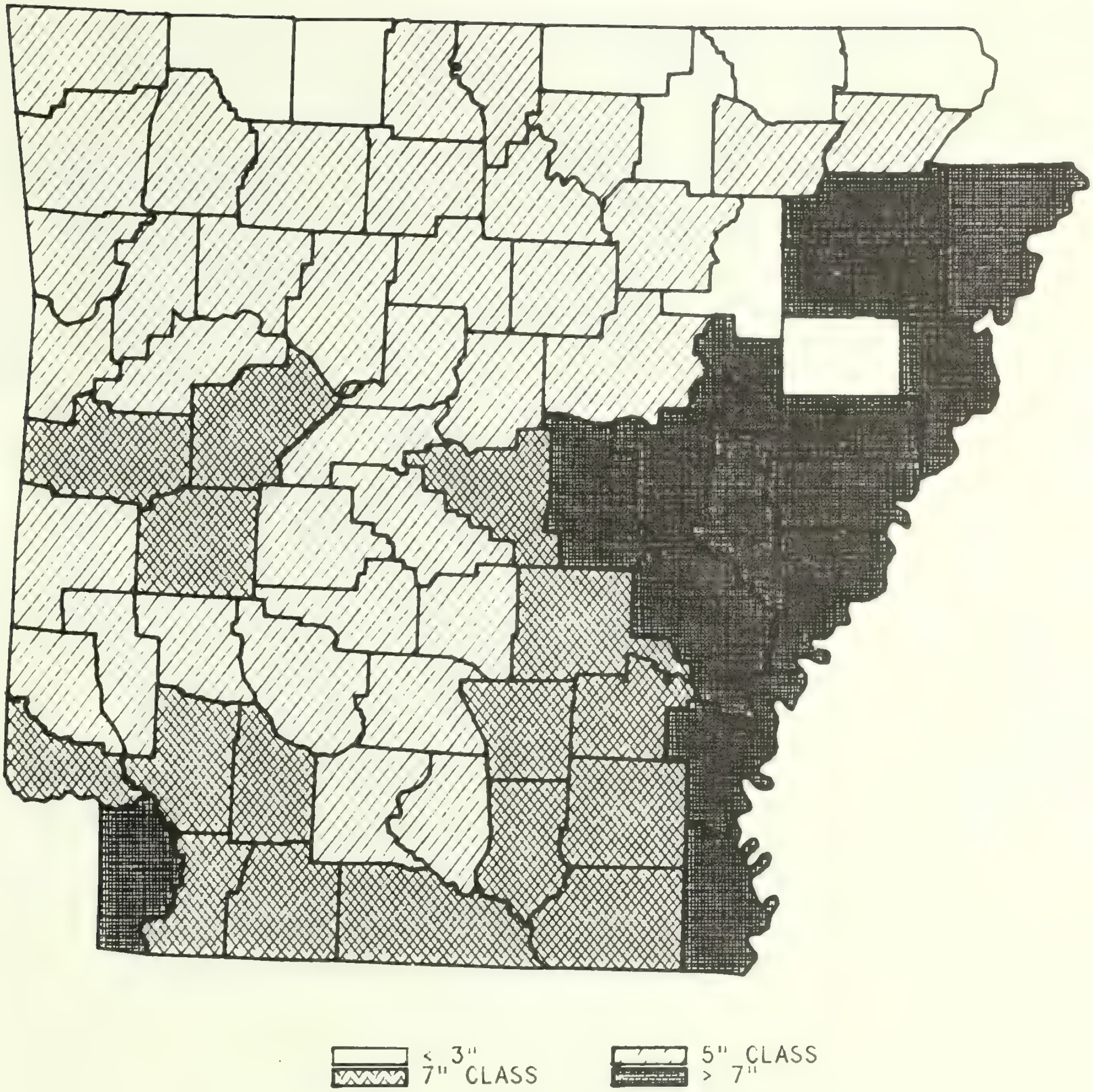

Figure 25.—*Average softwood DBH by county, quadratic mean diameter in inches, two inch diameter classes, Arkansas, 1988.*

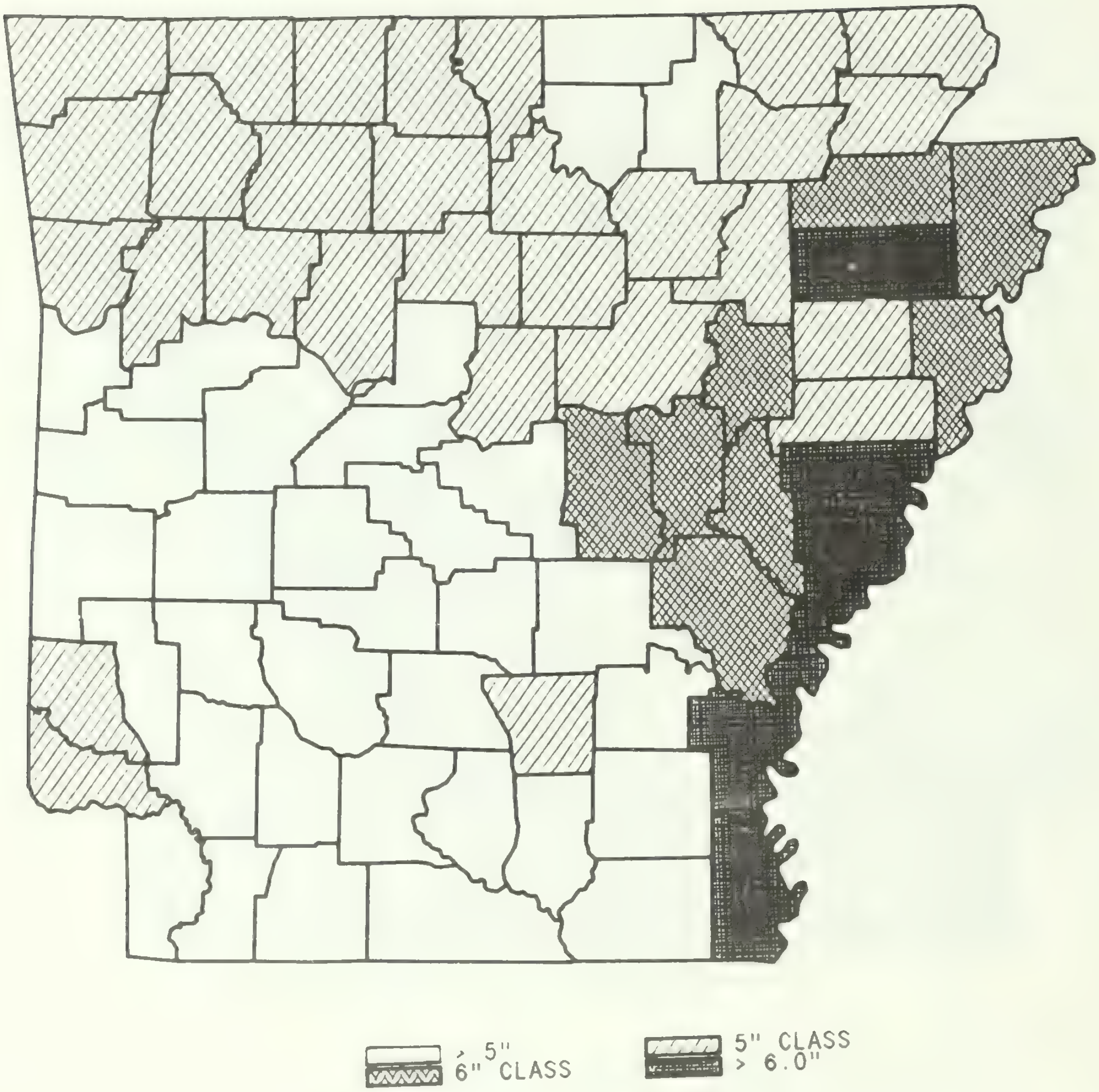

Figure 26.—*Average hardwood DBH by county, quadratic mean diameter in inches, one inch diameter classes, Arkansas, 1988.*

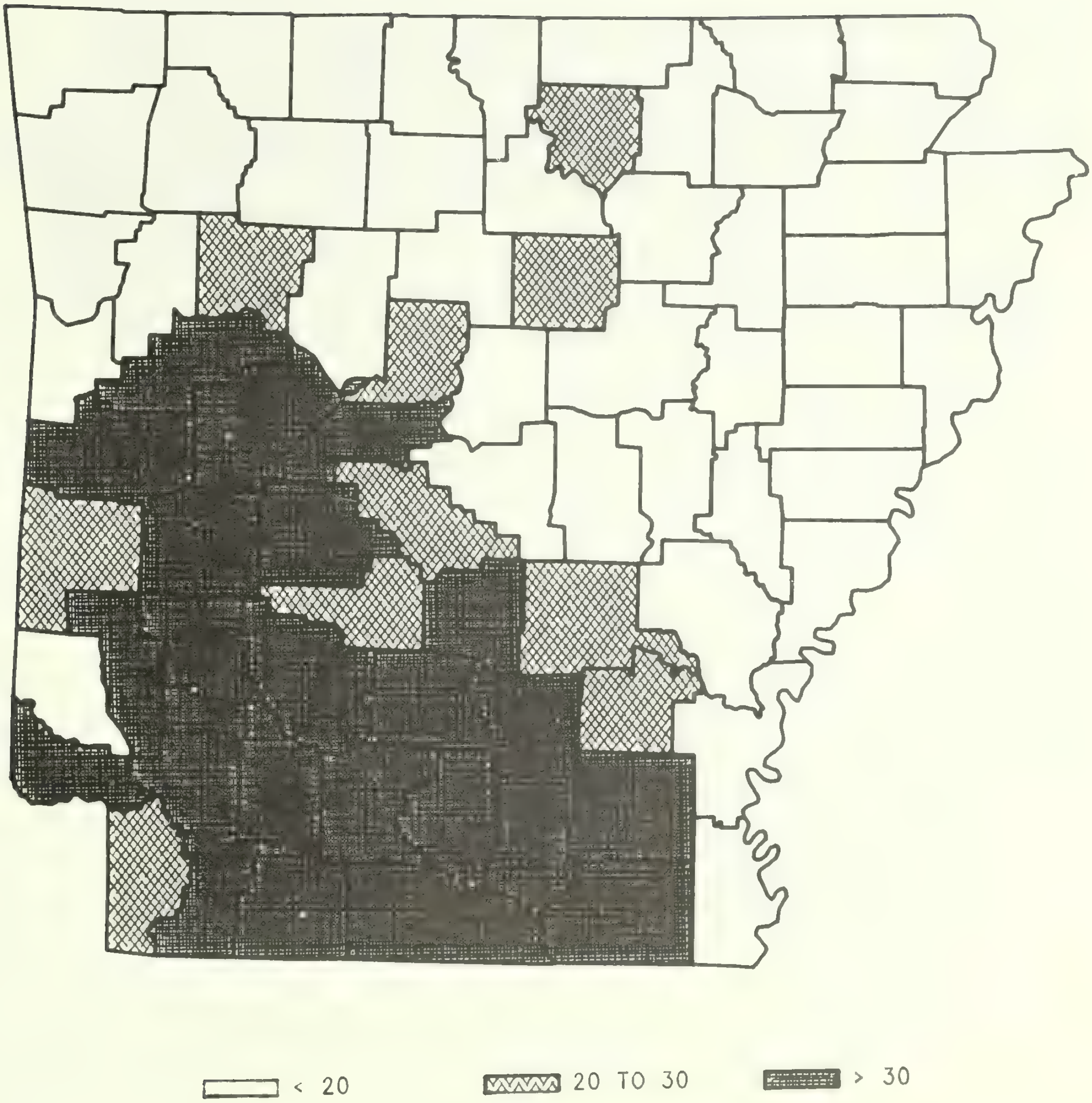

Figure 27.—*Average softwood basal area per acre on timberland by county, in square feet, Arkansas, 1988.*

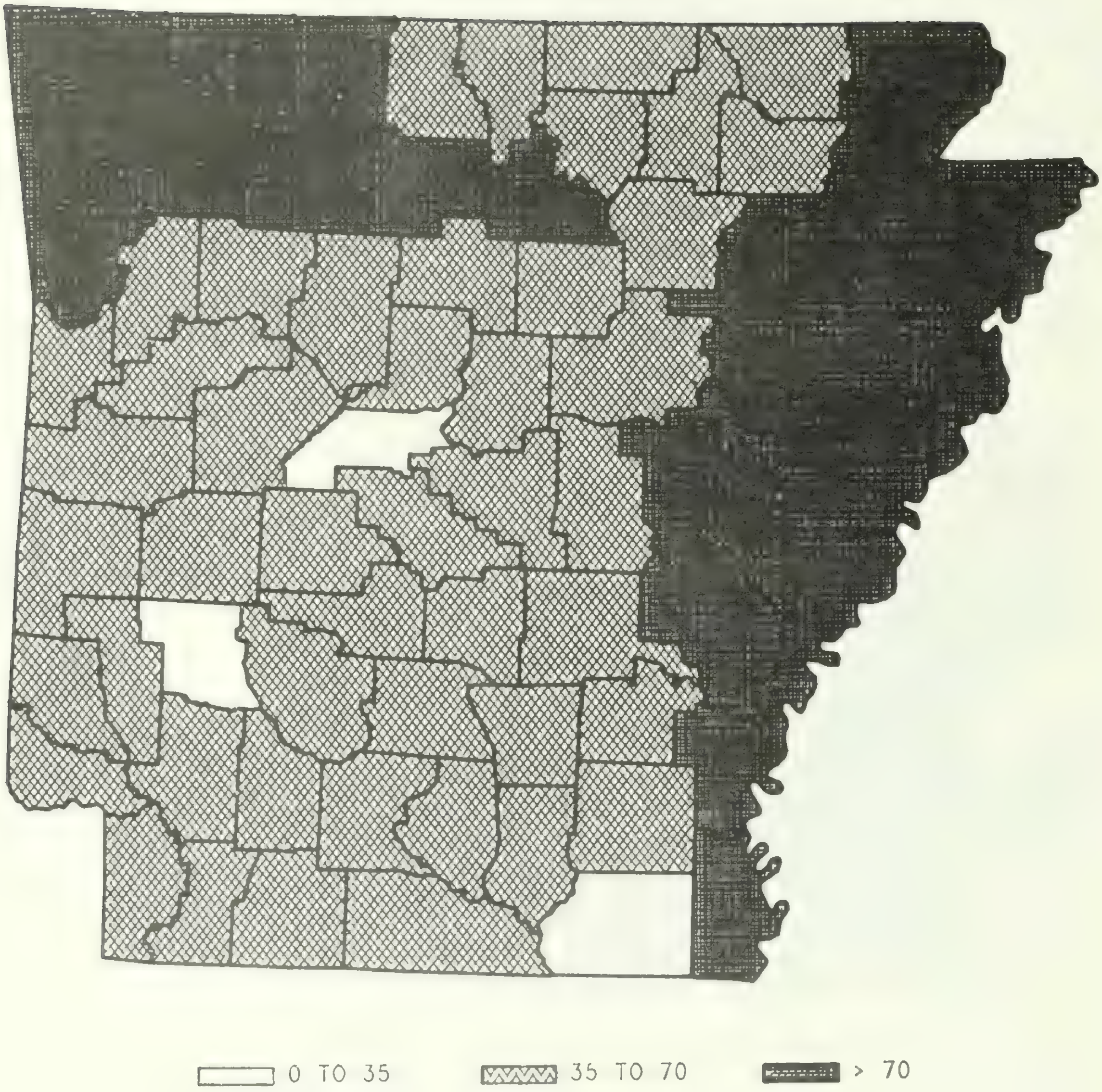

Figure 28.—*Average hardwood basal area per acre on timberland by county, in square feet, Arkansas, 1988.*

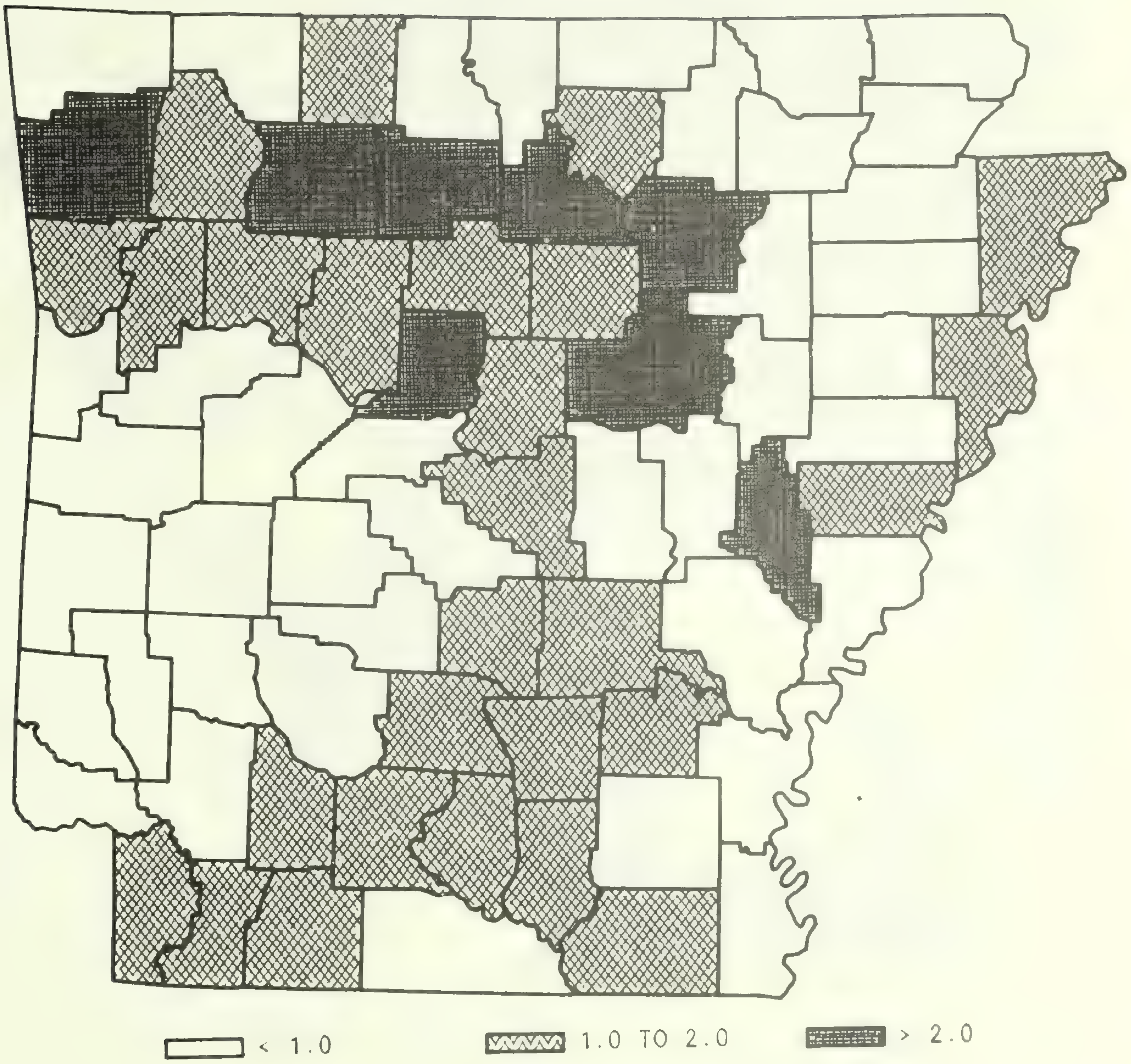

Figure 29.—*Ratio of average net annual growth to average net annual removals of growing stock for softwoods by county, Arkansas, 1988. A value greater than 1.0 indicates more growth than removals; a value less than 1.0 indicates more removals than growth.*

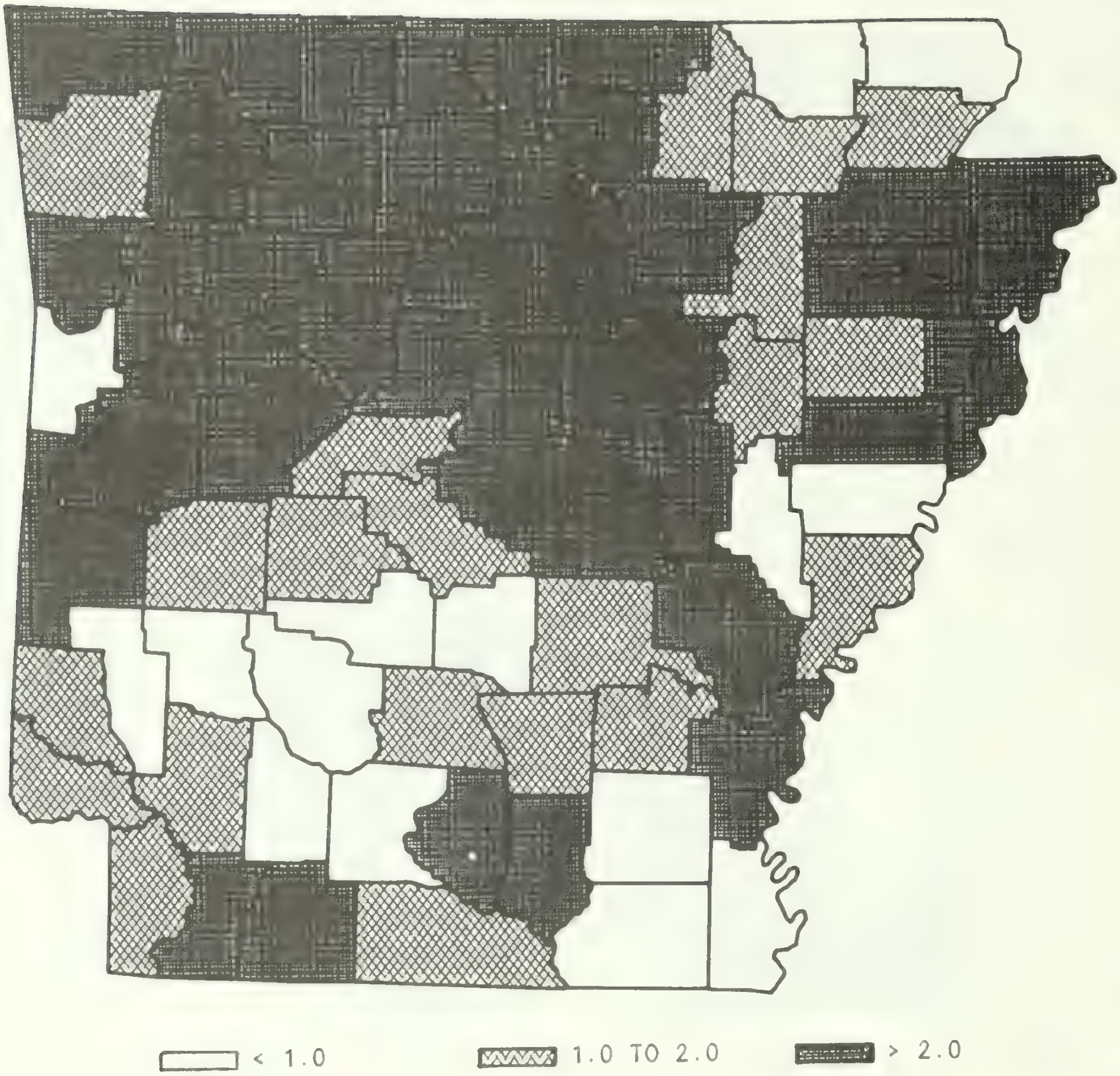

Figure 30.—*Ratio of average net annual growth to average net annual removals of growing stock for hardwoods by county, Arkansas, 1988. A value greater than 1.0 indicates more growth than removals; a value less than 1.0 indicates more removals than growth.*

Hines, F. Dee; Vissage, John S. Forest Statistics for Arkansas Counties – 1988. Resource Bull. SO-141. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station; 1988. 68 p.

Tabulates forest resource information from a new inventory of Arkansas counties.

Additional Keywords: Area, volume, forest type, stand size, ownership.

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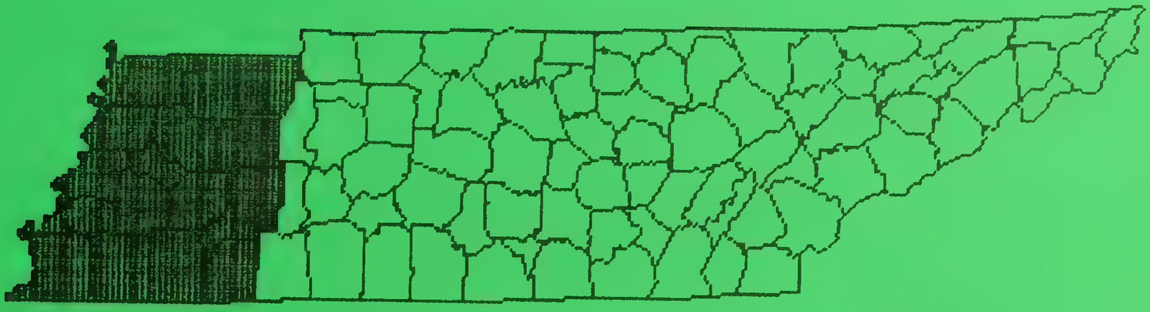
Forest Statistics for West Tennessee Counties - 1989

Dennis M. May and John S. Vissage



SUMMARY

The 1989 survey of the West Unit of Tennessee revealed the following:

- Timberland now covers 1,970.0 thousand acres, an 8.5 percent decline since 1980.
- Bottomland hardwood types fell 14.4 percent since 1980.
- Timberland acres in other federal ownership doubled to 71.2 thousand acres.
- Timberland acres held by farmers fell 22.6 percent to 678.5 thousand acres.
- Sawtimber-sized stands have increased and now comprise 58.9 percent of all timberland acres.
- Hardwood growing stock numbers are down 23.7 percent and softwood growing stock numbers are up 12.5 percent since 1980.
- Volume in grade 1 and 2 trees fell 25.3 percent since 1980.
- Net growth is up for growing stock and sawtimber even though mortality increased 23.6 percent for growing stock and 51.6 percent for sawtimber.
- Hardwood removals dropped by more than half, while softwood removals more than doubled.

FOREWORD

The Southern Forest Survey, an activity of the Southern Forest Experiment Station Forest Inventory and Analysis work unit, covers the States of Alabama, Arkansas, Louisiana, Mississippi, Oklahoma, Tennessee, and Texas, and the island of Puerto Rico.

This survey is part of the nationwide Forest Survey originally authorized by the McSweeney-McNary Act of 1928. More recent legislation pertinent to the survey mission includes the Forest and Rangeland Renewable Resources Planning Act of 1974 and the Forest and Rangeland Renewable Resources Research Act of 1978. The survey mission is to develop, analyze, and maintain renewable forest resource information. This information is essential for formulation of forest policies and programs.

December 1988

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*Core tables are presented in response to the Southern Industrial Forestry Research Council's recommendations. These tables are identical among Forest Inventory and Analysis units in the eastern United States.

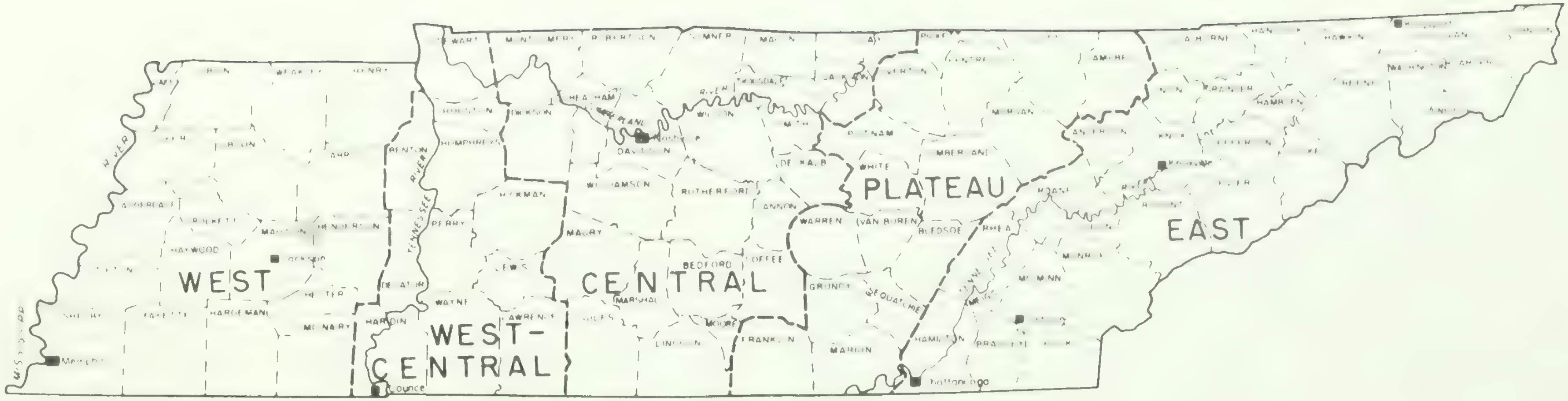

Figure I.-The forest survey regions of Tennessee.

Forest Statistics for West Tennessee Counties – 1989

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INTRODUCTION

Tabulated results were derived from data obtained during a recent inventory of 18 counties comprising the West Unit of Tennessee (fig. I). Tables 1-25 were developed to provide compatibility among Forest Inventory and Analysis Projects. Tables 26-40 are supplementary tables and may change from unit to unit or State to State to address specific resource issues.

Data on forest acreage and timber volume were secured by a three-step process. A forest-nonforest classification using aerial photographs was accomplished for points representing approximately 230 acres. These photo classifications were adjusted based on ground observations at sample locations representing approximately 3,840 acres. Finally, field measurements were made at forest locations on the intersections of grid lines spaced 3 miles apart. At these forest locations, per-acre estimates were obtained from trees measured on ten 37.5 basal area factor prism points.

The sampling methods were designed to achieve suitable sampling errors for estimates of area and volume at the State level. Sampling error increases as the area or volume considered decreases. The sampling errors presented in table I, equal to one standard deviation for the sample data, may be used to construct confidence intervals for population estimates. For example, at the 95 percent confidence level, the confidence interval for growing-stock volume (in million cubic feet) in the West Unit of Tennessee (with a sampling error of 7.0 percent) is

$$2{,}748.6 \pm 1.96(0.070 \times 2{,}748.6) = 2{,}748.6 \pm 377.1$$

Table I—*Sampling errors*[1] *for timberland, growing stock, and sawtimber, West Tennessee Counties, 1989*

County	Timberland	Growing stock			Sawtimber
		Volume	Growth	Removals	volume
	Percent				
Carroll	1.8	14.4	9.6	46.7	21.7
Chester	1.7	15.2	26.2	33.2	20.4
Dyer[3]	1.1	28.2	(2)	32.8	30.2
Fayette	1.8	20.2	18.0	29.7	26.3
Hardeman	1.7	14.1	16.6	34.6	18.3
Haywood	1.8	16.4	(2)	16.9	19.9
Henderson	2.7	14.8	19.9	35.4	17.8
Henry	2.1	15.4	22.6	33.8	18.4
Lauderdale[4]	1.4	24.8	30.0	(2)	17.3
McNairy	2.5	15.0	10.7	27.5	18.3
Madison	2.3	12.9	14.1	(2)	15.4
Obion	2.0	17.9	20.8	27.6	19.5
Shelby	1.3	16.2	16.6	...	21.0
Weakley	2.2	17.8	(2)	44.9	22.0
All counties	0.5	7.0	7.3	13.3	7.5

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[1] By random-sampling formula.
[2] Sampling error greater than 50.
[3] Crockett, Gibson, and Lake combined with Dyer.
[4] Tipton combined with Lauderdale.

where 1.96 is the number of standard deviations. This confidence interval indicates a 95-percent degree of confidence that the range, 2,371.5 to 3,125.7 million cubic feet, will contain the true growing-stock inventory volume.

Sampling errors for sub-groups of counties in the unit may be estimated by the following formula:

$$SE_g = \frac{SE_t\sqrt{X_t}}{\sqrt{X_g}}$$

where:

SE = standard error of estimate (expressed as a percent)
X = variable of interest (area or volume)
g = group of counties to be combined
t = total for the Unit.

For example, the sampling error estimate of growing-stock volume for Fayette, Hardeman, and McNairy counties is 13.6 percent. Thus, the 95 percent confidence interval for growing-stock volume is 732.6 ± 195.3 million cubic feet.

Ownership information is obtained by the same systematic sample outlined above. County courthouse records are used to obtain ownership information for each forested plot. An expansion factor representing timberland area in that county is then applied to the ownership group the plot represents. Next, the ownership groups are totaled for each county. Thus, acreages reported at the county level are estimates and may not exactly match known totals for each ownership category within that county.

In order to achieve greater compatibility among Forest Inventory and Analysis Projects, a new tree grading classification has been in effect since the 1988 Arkansas survey. Tree grade 5 is used for trees currently or prospectively capable of producing at least one 12-foot log or two 8-foot logs in the saw-log portion but not able to produce a 12-foot log in the butt 16 feet. These trees, formerly classed as rough or rotten, are now included in growing stock. Table II shows the impact of this change on volume and growth.

HIGHLIGHTS

Area

The West Unit of Tennessee encompasses the counties from the Mississippi River east to the uplands overlooking the Tennessee River. The unit is sparsely forested with only a third of

Table II–*Changes in volume and growth estimates due to inclusion of tree grade 5 in growing-stock inventory, West Tennessee counties, 1989*

	Tree grade 5		
	Excluded from growing stock	Included in growing stock	Percent change
	- - - - - - - *Million cubic feet* - - - - - - -		
Softwood:			
Growing-stock volume	331.8	336.9	1.5
Rough and rotten volume	21.2	16.1	-24.1
Growing-stock growth	10.6	11.2	5.7
Hardwood:			
Growing-stock volume	2240.9	2411.6	7.6
Rough and rotten volume	450.6	280.0	-37.9
Growing-stock growth	82.5	102.9	24.7
	- - - - - - - *Million board feet* - - - - - - -		
Softwood:			
Sawtimber volume	1174.6	1193.4	1.6
Sawtimber growth	31.1	33.4	7.4
Hardwood:			
Sawtimber volume	7753.2	8408.1	8.4
Sawtimber growth	346.3	424.2	22.5

its area being classified as timberland. Most of the timberland is restricted to stream margins and uplands not suited to agriculture. Over the years, the area of timberland has fluctuated inversely with the farm economy. Currently, the unit supports 1,970.0 thousand acres of timberland, an 8.5-percent decline since the 1980 survey. Much of this decline can be attributed to agricultural landclearings in the Northwest portion of the unit. Supporting this is a 14.4-percent decline in bottomland forest types (oak-gum-cypress and elm-ash-cottonwood) along with a 9.8-percent decline in the oak-hickory forest types since 1980. Even with these declines, hardwood forest types still predominate, accounting for more than four-fifths of the total timberland area.

Most of the timberland in the unit is privately held with less than 10.0 percent in public ownership. In the private ownership category, farmer ownership changed most significantly since the 1980 survey, falling 22.6 percent to 678.5 thousand acres. This loss is in line with the agriculture landclearing occurring in the unit. Interestingly, of the 162.3 thousand acres of privately held timberland owned by forest industry, almost half is in bottomland hardwood types with another quarter in upland hardwood (oak-hickory) types. This contrasts with the general pine preference expressed by forest industry in other units of the Midsouth and is a reflection of the importance of the hardwood resource in this unit. The most significant change in the public ownership category was the doubling of other federal ownership to 71.2 thousand acres.

Although shrinking in size since the last survey, timberlands in the unit have been maturing, shifting toward sawtimber-sized stands and away from pole and sapling-sized stands. Sawtimber stands now comprise 58.9 percent of all timberland acres, whereas in 1980 they only accounted for 48.7 percent.

Timber Inventory

With the general maturation of the unit's timberland, a shift towards fewer and larger trees of greater volume would be expected. Such is the case with the hardwood growing-stock portion of the inventory, which experienced a 23.7-percent reduction in numbers and a 22.0 percent rise in volume to 2,411.6 million cubic feet. The reduction in numbers was concentrated in size classes smaller than 10 inches, while the rise in volume was concentrated in the 10-inch and larger size classes. In contrast, the 12.5-percent increase in softwood growing-stock numbers occurred across most size classes as did the 17.8-percent rise in volume to 336.9 million cubic feet. Almost all of this volume increment was associated with the yellow pine component of the softwood inventory. The same general trend of increasing numbers and volumes held for the sawtimber portion of the inventory, which increased 7.5 percent to 1,193.4 million board feet for softwood and 22.6 percent to 8,408.1 million board feet for hardwood. The relatively small increase in softwood sawtimber volume is the result of the decline in cypress volume since 1980; both yellow pine and cedar volumes increased.

Higher inventory volumes should not in themselves be interpreted as an ideal situation, especially in a unit dominated by hardwoods. Quality, as expressed by tree grade, is also important when assessing current forest conditions. Unfortunately, in the West Unit volume increases have not been accompanied by quality increases. In fact, between 1980 and 1989, volume in grades 1 and 2 fell 25.3 percent, while volume in grades 3 and 4 rose 47.5 percent. All of the 24.7 percent decrease in grade 1 softwood volume can be attributed to one species – cypress. In contrast, the 43.4-percent reduction in grade 1 hardwood volume occurred across all species, except for yellow-poplar, which experienced a 47.6 percent increase in grade 1 volume since 1980.

Growth, Removals, and Mortality

The increasing inventory of the unit is the result of a favorable growth-to-drain situation over the survey period. On an average annual basis, net growth for the unit is 114.1 million cubic feet for growing stock and 457.6 million board feet for sawtimber. These figures are inflated due to the definition change initiated since the 1980 survey. Using comparable net growth figures (table II), net growth increased 12.4 percent for growing stock and 6.7 percent for sawtimber since 1980. The contribution of net growth to the increasing inventory could have been significantly larger had it not been for the 23.6-percent rise in growing-stock mortality and 51.6-percent rise in sawtimber mortality since 1980. Bark beetle-caused mortality of sawtimber-sized pines resulted in much of the increase in softwood mortality, while hardwood mortality jumped appreciably for oaks and sweetgums. The oaks died of weather and disease factors, possibly due to the impacts of oak decline; and beavers were responsible for much of the increase in sweetgum mortality.

The increase in mortality was more than compensated for by the 48.4-percent reduction in removals. On an average annual basis, removals only reached 34.6 million cubic feet for growing stock and 136.3 million board feet for sawtimber. Interestingly, hardwood removals fell by more than half, while softwood removals more than doubled. These removal figures reflect the depressed economy of the early eighties, which surely impacted the production levels of the timber products industry and the rate of agricultural landclearings in the farming sector. The drop in removals resulted in a favorable growth-to-removals ratio, approximately 3 to 1, which explains the increase in the inventory since 1980.

With the unit's forests maturing and supporting larger inventory volumes with favorable growth-to-removal ratios, the future would seem to be bright. However, the deteriorating quality of the resource in this predominantly hardwood unit could easily cast a shadow on this otherwise bright future.

DEFINITION OF TERMS

Average net annual growth.—Average net annual volume increase for the inter-survey period.

Average annual mortality.—Average annual sound-wood volume of growing-stock trees dying from natural causes.

Average annual removal.—Average net annual volume of growing-stock trees removed from the inventory by harvesting, cultural operations (such as timber-stand improvement), land clearing, or changes in land use.

Commercial species.—Tree species which normally develop into trees suitable for industrial wood products.

Forest type.—A classification of forest land based upon the species forming a plurality of live-tree stocking.

Growing-stock trees.—Live trees of commercial species. Rough and rotten trees are excluded.

Growing-stock volume.—The cubic-foot volume of sound wood in growing-stock trees at least 5.0 inches in diameter at breast height, from a 1-foot stump to a minimum 4.0-inch top diameter outside bark of the central stem, or to the point where the central stem breaks into limbs.

Live trees.—Commercial and noncommercial tree species of sapling size or larger.

Natural stands.—Stands with no evidence of artificial regeneration. This includes those established by seed tree regeneration methods.

Noncommercial species.—Tree species of typically small size, poor form, or inferior quality which normally do not develop into trees suitable for industrial wood products.

Planted stands.—Stands with some evidence of planting or direct seeding.

Poletimber trees.—Growing-stock trees at least 5.0 inches in diameter at breast height, but smaller than sawtimber size.

Reserved timberland.—Productive public forest land withdrawn from timber utilization through statute or administrative regulations.

Rotten trees.—Live trees of commercial species that do not contain at least one 12-foot log or two 8-foot logs in the saw-log portion, now or prospectively, primarily because of rot.

Rough trees.—Live trees of commercial species that do not contain at least one 12-foot log or two 8-foot logs in the saw-log portion, now or prospectively, primarily because of roughness or poor form. Also included are all live trees of noncommercial species.

Saplings.—Growing-stock trees at least 1.0 inches but less than 5.0 inches in diameter at breast height.

Sawtimber trees.—Live trees that contain at least one 12-foot log, or two 8-foot logs in the saw-log portion, and meet regional specifications for freedom from defect. Softwoods must be at least 9.0 inches in diameter at breast height and hardwoods at least 11.0 inches in diameter at breast height.

Sawtimber volume. – Sound-wood volume of the saw-log portion of growing-stock sawtimber trees in board feet, International 1/4-inch rule and in cubic feet.

Seedlings. – Growing-stock trees less than 1.0 inches in diameter at breast height and greater than one foot tall for hardwoods, greater than six inches tall for softwoods, and greater than one-half inch in diameter at ground level for longleaf pine.

Select red oaks. – A classification of several red oak species composed of: cherrybark, Shumard, and northern red oaks.

Select white oaks. – A classification of several white oak species composed of: white, swamp chestnut, swamp white, chinkapin, Durand, and bur oaks.

Site class. – A classification of forest land in terms of inherent capacity to grow crops of industrial wood.

Stand-size class. – A classification of forest land based on the diameter class of live trees on the sampled area; that is, sawtimber, poletimber, or sapling and seedling.

Timberland. – Forest land that is producing, or is capable of producing, crops of industrial wood and not withdrawn from timber utilization. Timberland is synonymous with "commercial forest land" in prior reports.

Tree grade. – A classification of the volume of the saw-log portion of sawtimber trees, based on: 1) the log grade of the butt log, or 2) ability to produce at least one 12-foot or two 8-foot logs in the upper-section of the saw-log portion.

Woodland. – Forest land incapable of yielding crops of industrial wood because of adverse site conditions.

CORE TABLES 1-25

Table 1–*Area by county and land class, West Tennessee, 1989*

County	All land[1]	Forest land: Total	Forest land: Timberland[2]	Forest land: Woodland[3]	Forest land: Reserved timberland	Nonforest land
	Thousand acres					
Carroll	383.7	169.1	169.1	...	...	214.7
Chester	184.7	99.4	99.4	...	...	85.3
Crockett[1]	...	...	...	...	...	...
Dyer[4]	996.2	111.1	111.1	...	...	885.2
Fayette	451.5	152.0	152.0	...	...	299.5
Gibson[4]	...	...	...	...	...	...
Hardeman	429.0	247.1	247.1	...	...	181.9
Haywood	341.6	71.2	71.2	...	...	270.4
Henderson	332.8	158.4	158.4	...	...	174.4
Henry	358.3	176.1	176.1	...	...	182.2
Lake[4]	...	...	...	...	...	...
Lauderdale[5]	594.3	146.7	145.5	...	1.2	447.6
McNairy	359.4	224.4	224.4	...	...	135.0
Madison	357.2	140.7	140.7	...	...	216.6
Obion	352.2	67.6	67.6	...	...	284.6
Shelby	493.8	111.6	111.6	...	...	382.2
Tipton[5]		...	...	...	...	...
Weakley	372.1	96.1	95.9	...	0.2	276.0
All counties	6007.0	1971.4	1970.0	...	1.4	4035.6

[1] From U.S. Bureau of the Census.

[2] Forest land (formerly termed commercial forest land) that is producing or capable of producing at least 20 cubic feet of industrial wood per acre per year. Includes areas which may be inaccessible or inoperable by current standards. Excludes reserved timberlands.

[3] Forest land incapable of producing 20 cubic feet of industrial wood per acre per year under natural conditions because of adverse site conditions.

[4] Crockett, Gibson, and Lake included in Dyer.

[5] Tipton included in Lauderdale.

Table 2–*Area of timberland by county and ownership class, West Tennessee, 1989*

County	All ownerships	National forest	Misc. federal	State	County and municipal	Forest industry[1]	Farmer	Corporate[2]	Individual[2]
	Thousand acres								
Carroll	169.1	...	5.8	11.7	...	11.7	23.3	...	116.6
Chester	99.4	...	...	9.9	...	19.9	29.8	5.0	34.8
Dyer[3]	111.1	...	...	22.2	...	11.1	55.5	11.1	11.1
Fayette	152.0	...	...	...	...	...	86.9	32.6	32.6
Hardeman	247.1	...	...	6.2	...	18.5	98.8	6.2	117.4
Haywood	71.2	...	...	...	...	17.8	41.5	...	11.9
Henderson	158.4	...	22.6	5.7	...	...	73.6	...	56.6
Henry	176.1	...	13.0	...	...	6.5	45.6	6.5	104.3
Lauderdale[4]	145.5	...	16.2	...	...	24.3	80.9	...	24.3
McNairy	224.4	...	...	5.8	...	40.3	40.3	...	138.1
Madison	140.7	...	...	6.1	...	...	36.7	6.1	91.7
Obion	67.6	...	6.1	6.1	...	12.3	24.6	...	18.4
Shelby	111.6	...	...	19.7	13.1	...	26.3	...	52.5
Weakley	95.9	...	7.4	...	...	...	14.8	7.4	66.4
All counties	1970.0	...	71.2	93.4	13.1	162.3	678.5	74.8	876.6

[1] Includes land leased to forest industry.
[2] Indian land will be classed as corporate or individual as defined by the Bureau of Indian Affairs.
[3] Crockett, Gibson, and Lake included in Dyer.
[4] Tipton included in Lauderdale

Table 3–*Area of timberland by county and forest type group, West Tennessee, 1989*

County	Total	Forest type group					
		Loblolly-shortleaf pine					
		Planted	Natural	Oak-pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood
	Thousand acres						
Carroll	169.1	5.8	...	5.8	122.4	35.0	
Chester	99.4	5.0	5.0	29.8	49.7	5.0	5.0
Dyer[1]	111.1	...	...	...	66.6	44.4	...
Fayette	152.0	...	21.7	10.9	108.6	10.9	...
Hardeman	247.1	18.5	12.4	30.9	154.4	30.9	...
Haywood	71.2	...	...	...	11.9	59.3	
Henderson	158.4	17.0	28.3	5.7	84.9	22.6	
Henry	176.1	6.5	...	...	123.9	45.6	
Lauderdale[2]	145.5	...	...	...	72.8	40.4	32.3
McNairy	224.4	5.8	40.3	40.3	120.8	17.3	...
Madison	140.7	...	6.1	24.5	61.2	48.9	
Obion	67.6	...	...	...	30.7	36.8	...
Shelby	111.6	...	...		59.1	45.9	6.6
Weakley	95.9	7.4	...	...	44.3	44.3	
All counties	1970.0	66.0	113.7	147.8	1111.2	487.4	43.9

[1] Crockett, Gibson, and Lake included in Dyer.
[2] Tipton included in Lauderdale

Table 4—*Area of timberland by county and stand-size class, West Tennessee, 1989*

County	All classes	Stand-size class		
		Sawtimber	Poletimber	Sapling-seedling
	Thousand acres			
Carroll	169.1	93.3	70.0	5.8
Chester	99.4	29.8	39.8	29.8
Dyer[1]	111.1	100.0	...	11.1
Fayette	152.0	108.6	32.6	10.9
Hardeman	247.1	117.4	80.3	49.4
Haywood	71.2	53.4	5.9	11.9
Henderson	158.4	90.5	45.3	22.6
Henry	176.1	91.3	32.6	52.2
Lauderdale[2]	145.5	113.2	8.1	24.3
McNairy	224.4	69.0	97.8	57.5
Madison	140.7	91.7	30.6	18.3
Obion	67.6	55.3	12.3	...
Shelby	111.6	72.2	32.8	6.6
Weakley	95.9	73.8	7.4	14.8
All counties	1970.0	1159.5	495.4	315.2

[1] Crockett, Gibson, and Lake included in Dyer.

[2] Tipton included in Lauderdale.

Table 5—*Area of timberland by county and site class, West Tennessee, 1989*

County	All classes	Site class (cubic feet/acre/year)				
		> 165	120-165	85-120	50-85	< 50
	Thousand acres					
Carroll	169.1	...	29.1	81.6	46.6	11.7
Chester	99.4	5.0	5.0	59.7	19.9	9.9
Dyer[1]	111.1	11.1	11.1	22.2	66.6	...
Fayette	152.0	21.7	21.7	32.6	54.3	21.7
Hardeman	247.1	6.2	43.2	68.0	111.2	18.5
Haywood	71.2	5.9	23.7	35.6	5.9	...
Henderson	158.4	11.3	17.0	79.2	45.3	5.7
Henry	176.1	...	13.0	71.7	78.3	13.0
Lauderdale[2]	145.5	16.2	40.4	48.5	40.4	...
McNairy	224.4	...	11.5	109.3	69.0	34.5
Madison	140.7	24.5	18.3	30.6	48.9	18.3
Obion	67.6	18.4	...	49.1	...	...
Shelby	111.6	39.4	13.1	26.3	32.8	...
Weakley	95.9	14.8	22.1	36.9	22.1	
All counties	1970.0	174.4	269.5	751.2	641.5	133.4

[1] Crockett, Gibson, and Lake included in Dyer.

[2] Tipton included in Lauderdale.

Table 6–*Area of timberland by county and stocking classes of growing-stock trees, West Tennessee, 1989*

County	All classes	Stocking class (percent) > 130	100-130	60-100	16.7-60	< 16.7
	Thousand acres					
Carroll	169.1	...	17.5	134.1	17.5	...
Chester	99.4	...	29.8	59.7	9.9	...
Dyer[1]	111.1	...	11.1	55.5	44.4	...
Fayette	152.0	...	32.6	86.9	32.6	...
Hardeman	247.1	...	43.2	129.7	74.1	...
Haywood	71.2	...	5.9	53.4	11.9	...
Henderson	158.4	...	28.3	118.8	11.3	...
Henry	176.1	...	32.6	97.8	45.6	...
Lauderdale[2]	145.5	...	8.1	72.8	56.6	8.1
McNairy	224.4	5.8	34.5	149.6	34.5	...
Madison	140.7	...	18.3	110.1	12.2	...
Obion	67.6	...	12.3	43.0	12.3	...
Shelby	111.6	...	19.7	72.2	19.7	...
Weakley	95.9	...	14.8	59.0	22.1	...
All counties	1970.0	5.8	308.8	1242.6	404.8	8.1

[1] Crockett, Gibson, and Lake included in Dyer.
[2] Tipton included in Lauderdale.

Table 7–*Area of timberland by forest type and ownership class, West Tennessee, 1989*

Forest type[1]	All ownerships	National forest	Other public	Forest industry	Forest industry-leased	Other private
	Thousand acres					
Loblolly-shortleaf pine	179.7	...	17.0	11.5	...	151.2
Softwood total	179.7	..	17.0	11.5	...	151.2
Oak-pine	147.8	...	16.9	31.8	...	99.1
Oak-hickory	1111.2	...	41.7	42.0	...	1027.5
Oak-gum-cypress	487.4	...	87.4	63.0	5.9	331.1
Elm-ash-cottonwood	43.9	..	14.6	8.1	...	21.1
Hardwood total	1790.3	...	160.7	144.9	5.9	1478.8
All types	1970.0	..	177.7	156.4	5.9	1630.0

[1] Forest type is based on species plurality of all live trees. Mixed types that in combination contain a majority of hardwood stocking are hardwood types.

Table 8–*Area of timberland by ownership and stocking classes of growing-stock trees, West Tennessee, 1989*

Ownership class	All classes	Stocking class (percent) > 130	100-130	60-100	16.7-60	< 16.7
	Thousand acres					
Other public	177.7	...	34.5	113.1	30.1	
Forest industry	156.4	5.8	45.4	79.8	25.4	
Forest industry-leased	5.9		...	5.9		
Other private	1630.0	.	228.9	1043.7	349.4	8.1
All ownerships	1970.0	5.8	308.8	1242.6	404.8	8.1

Table 9–*Area of timberland by forest type and stand-size class, West Tennessee, 1989*

Forest type[1]	All classes	Stand-size class Sawtimber	Poletimber	Sapling-seedling
	Thousand acres			
Loblolly-shortleaf pine	179.7	105.5	39.3	34.9
Softwood total	179.7	105.5	39.3	34.9
Oak-pine	147.8	32.4	57.4	58.0
Oak-hickory	1111.2	638.0	288.4	184.9
Oak-gum-cypress	487.4	352.8	102.1	32.5
Elm-ash-cottonwood	43.9	30.8	8.1	5.0
Hardwood total	1790.3	1054.0	456.1	280.3
All types	1970.0	1159.5	495.4	315.2

[1] Forest type is based on species plurality of all live trees. Mixed types that in combination contain a majority of hardwood stocking are hardwood types.

Table 10–*Number of live trees on timberland by species and diameter class, West Tennessee, 1989*

Species	All classes	Diameter class (inches at breast height) 1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Shortleaf-loblolly pine	69919	21281	18028	12780	7678	4723	3078	1609	535	145	54	8	...
Other yellow pines	456	456	...	...	...	...	...	...	...	...	...	...	...
Cypress	1814	...	563	...	196	136	31	143	176	104	109	239	116
Other softwoods	60837	35918	16841	5161	1626	776	389	86	...	39	...	...	...
Total softwoods	133026	57655	35433	17941	9500	5636	3499	1839	710	288	163	246	116
Select white oaks	67394	34633	14306	6012	3506	2894	2127	1476	801	735	380	482	42
Select red oaks	16957	4407	2573	1930	2505	1582	991	978	686	366	321	525	94
Other white oaks	31670	15159	4337	3767	2295	2344	1239	1327	502	305	177	214	4
Other red oaks	67771	25296	11103	6119	6324	6626	3748	3324	2011	1602	654	806	159
Hickory	74271	45149	10803	5558	3988	3238	2310	1648	741	479	195	156	5
Hard maple	18129	9240	5036	1716	885	476	261	261	113	85	...	53	4
Soft maple	83721	47390	14216	9074	5479	3701	1632	917	613	412	93	167	26
Beech	12614	7100	2253	1151	432	296	409	318	130	179	125	168	53
Sweetgum	90410	47709	17265	7955	4608	5083	3092	2001	1529	483	347	292	47
Tupelo-blackgum	48780	34174	4158	3956	2754	1453	1067	596	328	142	119	34	...
Ash	31556	17341	3317	3799	1930	2391	1237	563	453	314	154	51	6
Cottonwood-aspen	1318	...	602	274	...	48	62	21	78	55	22	69	86
Basswood	753	598	...	155	...	...	...	...	...	...	...	...	...
Yellow-poplar	27948	12933	4746	1859	2360	1674	1449	1073	788	404	358	290	13
Black walnut	763	...	...	100	236	182	145	48	43	...	10	...	...
Other hardwoods	266455	179831	48815	18317	8477	4893	2275	1733	841	449	318	404	103
Total hardwoods	840512	480959	143529	71741	45779	36881	22043	16285	9656	6010	3273	3710	644
Noncommercial	99206	76691	13226	4730	3008	882	450	45	44	53	59	19	
All species	1072743	615306	192187	94413	58287	43398	25992	18169	10410	6351	3495	3975	760

Table 11—*Number of growing-stock trees on timberland by species and diameter class, West Tennessee, 1989*

Species	All classes	Diameter class (inches at breast height) 1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Shortleaf-loblolly pine	55256	12651	13771	11557	7348	4526	3078	1609	520	145	43	8	..
Other yellow pines	456	456	...	...	...	...	...	...	...	...	...	...	...
Cypress	1648	...	563	...	121	136	31	118	139	88	109	239	104
Other softwoods	53302	32165	15292	3524	1359	520	338	65	...	39	...	...	.
Total softwoods	110662	45271	29625	15081	8828	5183	3448	1792	659	272	152	246	104
Select white oaks	43453	15558	11545	4555	3273	2742	2101	1476	726	663	349	437	25
Select red oaks	13911	2154	2045	1930	2505	1486	991	892	671	353	321	498	66
Other white oaks	20905	7734	2715	3065	1910	2187	1205	1105	445	266	136	131	4
Other red oaks	53716	15848	8908	5218	6263	6291	3455	3135	1773	1415	603	695	113
Hickory	41041	17784	6853	4618	3857	2965	2051	1531	709	375	171	121	5
Hard maple	6712	2572	1239	1103	885	394	117	240	63	69	.	29	...
Soft maple	32646	14153	5568	5010	2799	2529	1085	640	353	287	69	132	20
Beech	7348	4369	561	762	432	254	303	209	97	138	80	110	32
Sweetgum	52299	20465	8788	6760	4138	4728	2967	1930	1443	444	337	252	47
Tupelo-blackgum	16241	6154	2593	2685	1753	1075	917	510	276	142	109	27	...
Ash	18440	8691	1129	2765	1322	1954	1138	517	430	314	131	44	6
Cottonwood-aspen	1305	...	602	274	..	48	62	21	78	42	22	69	86
Basswood	155	..	...	155	...	...	...	.	.				
Yellow-poplar	25233	10644	4746	1771	2160	1674	1449	1012	757	392	349	275	5
Black walnut	621	...	...	100	147	182	91	48	43		10		
Other hardwoods	93085	47344	19596	11268	6345	3758	1797	1291	635	375	274	339	63
Total hardwoods	427109	173471	76889	52041	37788	32267	19730	14557	8500	5274	2961	3160	472
All species	537771	218743	106515	67122	46616	37450	23178	16349	9159	5545	3113	3406	576

Table 12--*Volume of growing stock on timberland by species and diameter class, West Tennessee, 1989*

Species	All classes	Diameter class (inches at breast height) 5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet										
Shortleaf-loblolly pine	247.2	28.6	44.8	50.5	55.5	40.0	18.4	6.5	2.4	0.4	.
Cypress	65.5	.	0.9	2.1	0.4	2.7	4.7	4.5	6.2	24.6	19.5
Other softwoods	24.3	6.9	6.5	4.3	4.2	1.2	..	1.1			
Total softwoods	336.9	35.5	52.2	56.9	60.2	43.9	23.1	12.1	8.7	25.0	19.5
Select white oaks	248.4	11.5	20.6	30.7	38.4	39.1	24.9	30.5	18.5	31.8	2.5
Select red oaks	183.6	5.3	14.5	15.2	18.2	23.2	24.6	15.3	17.1	40.4	9.9
Other white oaks	116.6	7.2	9.6	21.2	19.0	22.7	12.5	9.5	6.4	7.9	0.5
Other red oaks	462.0	14.5	35.3	67.4	57.5	69.6	55.0	61.8	33.0	51.4	16.4
Hickory	205.1	11.2	21.8	33.6	37.9	38.0	24.2	17.1	10.1	10.1	1.0
Hard maple	28.7	2.9	5.5	4.8	2.7	5.3	2.5	2.8		2.2	
Soft maple	124.2	12.6	16.7	27.4	17.1	14.4	11.5	10.8	3.2	9.2	1.3
Beech	41.3	2.1	2.4	2.7	5.6	5.3	2.9	5.4	4.5	7.3	3.0
Sweetgum	331.0	14.0	25.7	53.8	57.7	53.2	54.6	23.3	19.7	22.3	6.6
Tupelo-blackgum	72.8	6.8	9.3	10.3	15.0	11.3	8.6	5.2	5.0	1.4	
Ash	116.3	6.7	9.6	22.9	21.5	15.5	13.9	14.8	7.1	3.1	1.3
Cottonwood-aspen	33.5	0.4		0.4	1.2	0.7	3.4	2.2	1.5	7.0	16.8
Basswood	0.2	0.2									
Yellow-poplar	187.4	4.6	13.9	18.7	26.2	28.2	29.3	20.2	21.8	24.2	0.3
Black walnut	7.4	0.3	1.2	1.6	1.6	1.2	0.9	.	0.6		
Other hardwoods	253.1	31.0	34.3	42.1	30.0	31.2	20.3	15.3	16.0	26.1	6.8
Total hardwoods	2411.6	131.4	220.6	352.8	349.8	359.0	288.9	234.1	164.5	244.3	66.3
All species	2748.6	166.9	272.8	409.7	409.9	402.9	312.0	246.3	173.1	269.3	85.8

Table 13–*Volume of growing stock in the saw-log portion of sawtimber[1] trees on timberland by species and diameter class, East Tennessee, 1989*

Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet								
Shortleaf-loblolly pine	144.1	38.5	47.6	34.3	15.8	5.6	2.0	0.3	...
Cypress	59.6	1.7	0.3	2.1	3.9	4.0	5.9	23.1	18.6
Other softwoods	9.0	3.4	3.5	1.1	...	1.0	...	...	...
Total softwoods	212.7	43.6	51.4	37.5	19.7	10.6	7.9	23.4	18.6
Select white oaks	152.7	...	28.4	32.2	21.1	26.2	16.2	26.4	2.3
Select red oaks	124.0	...	14.2	18.7	21.3	12.7	14.0	35.2	7.9
Other white oaks	65.1	...	15.0	19.0	10.8	8.1	5.3	6.5	0.4
Other red oaks	286.7	...	42.0	56.8	47.6	54.2	28.4	43.8	13.9
Hickory	113.1	...	27.9	31.1	21.2	14.2	9.1	8.9	0.7
Hard maple	12.3	...	1.5	4.3	2.1	2.2	...	2.1	...
Soft maple	55.1	...	12.4	11.4	9.6	9.6	2.9	8.0	1.2
Beech	28.7	...	4.2	4.3	2.6	4.2	3.6	6.9	2.9
Sweetgum	198.8	...	41.5	44.3	47.6	21.1	17.8	20.7	5.8
Tupelo-blackgum	37.5	...	10.8	9.2	7.4	4.4	4.4	1.3	...
Ash	64.1	...	15.5	13.2	11.9	12.8	6.5	2.8	1.3
Cottonwood-aspen	29.7	...	1.0	0.6	3.0	2.0	1.3	6.5	15.3
Yellow-poplar	127.3	...	19.3	23.7	26.0	18.3	19.2	20.6	0.3
Black walnut	3.6	...	1.3	0.9	0.8	...	0.6	...	...
Other hardwoods	120.4	...	21.7	25.0	17.0	12.7	14.1	23.4	6.4
Total hardwoods	1419.1	...	256.7	294.7	250.0	202.6	143.4	213.2	58.5
All species	1631.8	43.6	308.1	332.2	269.7	213.2	151.3	236.6	77.1

Diameter class (inches at breast height)

[1] That part of the bole of sawtimber trees between a 1-foot stump and saw-log top.

Table 14–*Volume of sawtimber on timberland by species and diameter class, East Tennessee, 1989*

Diameter class (inches at breast height)

Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Shortleaf-loblolly pine	815.3	199.3	266.8	202.2	96.5	35.2	13.3	1.9	...
Cypress	334.3	9.3	1.1	11.1	23.1	21.7	32.5	134.0	101.6
Other softwoods	43.8	16.2	17.3	5.4	...	5.0	...	...	...
Total softwoods	1193.4	224.8	285.2	218.7	119.6	61.9	45.8	135.9	101.6
Select white oaks	913.7	...	158.4	185.8	127.7	160.7	101.9	168.3	10.9
Select red oaks	755.4	...	79.7	108.4	127.4	76.4	90.5	219.4	53.6
Other white oaks	376.9	...	79.4	108.6	63.9	48.4	35.3	38.6	2.7
Other red oaks	1693.2	...	226.3	317.0	278.0	329.8	177.9	271.8	92.4
Hickory	676.8	...	157.4	181.3	128.7	91.5	57.6	54.8	5.5
Hard maple	73.9	...	8.8	24.6	12.7	14.2	...	13.6	...
Soft maple	308.1	...	65.7	63.9	55.2	53.7	19.2	44.0	6.5
Beech	168.5	...	23.7	21.9	15.1	26.2	23.3	42.2	16.1
Sweetgum	1170.3	...	232.2	255.4	283.4	127.7	106.8	127.0	37.9
Tupelo-blackgum	206.3	...	57.3	48.6	43.5	23.7	26.0	7.2	...
Ash	371.8	...	84.7	80.4	68.9	78.1	37.3	16.1	6.4
Cottonwood-aspen	191.9	...	5.5	3.9	19.2	11.9	7.9	44.2	99.4
Yellow-poplar	768.7	...	108.5	137.6	155.8	110.1	121.7	132.8	2.0
Black walnut	21.3	...	7.6	5.4	4.6	...	3.6	...	...
Other hardwoods	711.4	...	118.1	141.8	99.2	77.9	90.3	144.0	40.2
Total hardwoods	8408.1	...	1413.2	1684.6	1483.3	1230.4	899.2	1324.0	373.4
All species	9601.6	224.8	1698.4	1903.3	1602.9	1292.3	945.0	1459.9	475.0

Table 15–*Volume of growing stock and sawtimber on timberland by county and species group, West Tennessee, 1989*

County	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Carroll	252.5	7.1	10.1	1.5	95.3	138.5	804.9	31.6	49.2	2.3	267.5	454.3
Chester	104.0	10.8	18.7	1.1	29.3	44.1	296.3	37.9	76.2	1.9	62.8	117.5
Dyer[3]	192.6	...	...	24.0	54.5	114.2	847.9	...	...	123.6	243.6	480.7
Fayette	201.7	...	14.6	6.2	37.7	143.2	638.1	...	34.2	10.6	102.2	491.1
Hardeman	297.7	28.1	25.3	5.3	76.2	162.9	955.3	108.3	87.7	10.9	222.3	526.2
Haywood	122.5	...	...	...	43.0	79.5	488.5	...	...	...	157.0	331.5
Henderson	214.6	26.9	9.4	3.2	71.3	103.7	646.4	75.9	23.2	5.9	197.7	343.8
Henry	231.1	2.2	...	0.6	109.0	119.2	835.8	9.2	...	...	402.3	424.4
Lauderdale[4]	219.5	...	...	20.0	113.0	86.5	936.3	...	...	105.4	473.8	357.1
McNairy	233.2	4.0	72.1	2.4	49.1	105.5	610.2	..	227.6	4.7	110.1	267.7
Madison	209.2	...	1.2	6.9	68.6	132.6	729.1	..	1.4	18.3	238.6	470.8
Obion	141.4	...	...	12.9	49.4	79.2	613.1	...	..	67.1	172.8	373.1
Shelby	189.0	...	...	1.7	130.6	56.8	678.8	...	...	7.8	478.7	192.4
Weakley	139.7	16.0	0.6	4.1	45.9	73.0	520.8	50.0	2.8	19.7	150.2	298.1
All counties	2748.6	95.2	152.0	89.7	972.9	1438.7	9601.6	312.9	502.4	378.2	3279.5	5128.6

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash

[3] Crockett, Gibson, and Lake included in Dyer.

[4] Tipton included in Lauderdale.

Table 16–*Volume of timber on timberland by class of timber and species group, West Tennessee, 1989*

Class of timber	All species	Softwood			Hardwood	
		Pine				
		Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet					
Sawtimber trees:						
Saw-log portion	1631.8	55.8	88.3	68.6	556.0	863.1
Upper-stem portion	324.3	12.4	17.2	6.9	108.1	179.6
Total	1956.1	68.2	105.6	75.5	664.2	1042.7
Poletimber trees	792.5	27.0	46.4	14.3	308.7	396.1
All growing-stock trees	2748.6	95.2	152.0	89.7	972.9	1438.7
Rough trees:						
Sawtimber size	108.5	0.4	1.2	4.2	36.8	65.9
Poletimber size	130.3	1.6	1.6	4.7	59.6	62.7
Total	238.8	2.1	2.8	8.9	96.4	128.6
Rotten trees:						
Sawtimber size	51.5	--	--	2.3	28.6	20.6
Poletimber size	5.7	--	--	.	3.2	2.5
Total	57.2	--	--	2.3	31.8	23.1
Salvable dead trees:						
Sawtimber size	20.7	2.3	3.5	0.4	9.1	5.5
Poletimber size	5.7		1.9	0.2	1.3	2.3
Total	26.4	2.3	5.5	0.5	10.4	7.8
All classes	3071.0	99.5	160.3	101.5	1111.5	1598.1

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 17–*Volume of live trees and growing stock on timberland by ownership class and species group, West Tennessee, 1989*

	Live trees						Growing stock					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet											
Other public	364.1	15.7	15.8	46.9	167.2	118.5	308.8	15.5	15.8	43.2	129.8	104.4
Forest industry	238.1	7.8	15.6	19.1	75.9	119.7	221.7	7.3	15.1	17.4	66.6	115.2
Forest industry-leased	14.7	...	...	...	4.9	9.8	13.8	...	...	...	4.9	9.0
Other private	2427.6	73.7	123.4	35.0	853.2	1342.3	2204.2	72.4	121.1	29.1	771.6	1210.1
All ownerships	3044.6	97.3	154.8	100.9	1101.2	1590.4	2748.6	95.2	152.0	89.7	972.9	1438.7

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 18–*Average net annual growth of growing stock and sawtimber on timberland by county and species group, West Tennessee, 1989*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Carroll	12.7	0.1	0.5		5.4	6.7	51.4	0.9	2.2	-0.2	19.6	28.8
Chester	2.6	...	0.4	...	0.6	1.6	7.4	0.1	-0.5	0.1	1.6	6.1
Dyer[3]	2.3	...	...	...	-0.1	2.4	14.4	...	...	...	0.8	13.5
Fayette	10.5		0.8	0.1	2.5	7.0	38.9	...	2.9	0.6	7.3	28.0
Hardeman	11.0	0.6	2.1	0.4	2.0	5.8	35.8	4.0	6.4	0.8	3.2	21.4
Haywood	4.3	...	...	...	2.3	1.9	10.2	...	...	...	6.6	3.6
Henderson	7.6	-0.2	1.3	...	2.7	3.9	31.4	0.2	3.1	...	11.3	16.9
Henry	10.3	...	...	...	6.5	3.8	53.0	...	...	...	35.7	17.3
Lauderdale[4]	9.5		...	0.5	4.7	4.2	36.6	...	...	2.4	16.3	17.9
McNairy	12.0	0.6	2.6	0.2	3.5	5.2	36.7	0.6	6.1	0.1	10.4	19.5
Madison	9.2		0.1	0.4	3.1	5.6	39.8	...	0.2	1.1	14.1	24.4
Obion	5.8		...	0.2	1.7	3.9	32.5	...	...	0.9	8.5	23.1
Shelby	12.7	...	...	...	8.8	3.8	52.6	...	...	0.1	38.6	14.0
Weakley	3.6	0.6	0.1	...	-0.2	3.1	16.9	1.2	0.1	...	-0.2	15.7
All counties	114.1	1.6	7.8	1.9	43.8	59.1	457.6	7.0	20.5	5.9	173.8	250.4

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.
[3] Crockett, Gibson, and Lake included in Dyer.
[4] Tipton included in Lauderdale.

Table 19–*Average net annual removals of growing stock and sawtimber on timberland by county and species group, West Tennessee, 1989*

County	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Carroll	0.6	...	0.1	...	...	0.4	2.0	...	0.2	...	...	1.8
Chester	0.2	0.2	...	...	...	0.1	0.9	0.7	...	...	...	0.2
Dyer[3]	4.6	...	...	...	2.5	2.1	21.1	...	...	...	11.2	9.9
Fayette	0.9	...	...	...	...	0.8	2.7	...	...	...	...	2.7
Hardeman	4.6	...	0.1	0.2	1.9	2.4	16.9	...	0.3	1.1	7.1	8.4
Haywood	1.3	...	...	...	0.2	1.1	5.0	...	...	...	1.2	3.8
Henderson	3.4	...	...	0.1	1.6	1.7	12.3	...	...		4.6	7.7
Henry	1.6	...	...	...	0.9	0.7	5.4	...	...	...	2.1	3.3
Lauderdale[4]	1.3	...	...	...	0.3	1.0	6.5	...	...	...	0.9	5.6
McNairy	6.1	0.8	1.8	0.1	1.1	2.3	23.4	...	7.8	0.3	4.7	10.6
Madison	1.6	...	...	...	0.5	1.2	7.5	...	...	...	2.2	5.3
Obion	3.2	...	...	...	0.2	3.1	15.2	...	...	...	0.5	14.7
Shelby	...	...	...	...	...	...	...	...	...	...		
Weakley	5.2	2.7	...	...	1.2	1.4	17.3	5.0	...	...	4.9	7.5
All counties	34.6	3.6	2.0	0.4	10.3	18.3	136.3	5.7	8.2	1.3	39.4	81.5

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.
[3] Crockett, Gibson, and Lake included in Dyer.
[4] Tipton included in Lauderdale.

Table 20–*Average net annual growth and average annual removals of growing stock on timberland by species, West Tennessee, 1989*

Species	Growth	Removals
	Million cubic feet	
Yellow pines	9.4	5.6
Other softwoods	1.9	0.4
Total softwoods	11.2	6.0
Select white-red oaks	19.2	7.1
Other white-red oaks	23.1	7.4
Hickory	7.7	2.5
Hard maple	2.0	0.1
Sweetgum	15.1	3.8
Ash-walnut-black cherry	5.3	1.1
Yellow-poplar	12.2	1.6
Other hardwoods	18.4	5.0
Total hardwoods	102.9	28.6
All species	114.1	34.6

Table 21–*Average net annual growth and average annual removals of sawtimber on timberland by species, West Tennessee, 1989*

Species	Growth	Removals
	Million board feet	
Yellow pines	27.5	13.9
Other softwoods	5.9	1.3
Total softwoods	33.4	15.3
Select white-red oaks	85.6	36.0
Other white-red oaks	100.7	32.7
Hickory	26.5	10.0
Hard maple	6.6	...
Sweetgum	67.2	15.3
Ash-walnut-black cherry	18.6	2.3
Yellow-poplar	55.1	6.7
Other hardwoods	63.9	18.0
Total hardwoods	424.2	121.0
All species	457.6	136.3

Table 22–*Average annual mortality of growing stock and sawtimber on timberland by species, West Tennessee, 1989*

Species	Growing stock	Sawtimber
	Million cubic feet	*Million board feet*
Yellow pines	2.6	7.0
Other softwoods	0.4	0.8
Total softwoods	2.9	7.8
Select white-red oaks	3.2	11.9
Other white-red oaks	5.9	13.5
Hickory	0.9	2.4
Sweetgum	4.3	17.0
Ash-walnut-black cherry	1.0	1.3
Yellow-poplar	0.3	1.3
Other hardwoods	8.8	29.6
Total hardwoods	24.3	77.1
All species	27.2	84.9

Table 23–*Average net annual growth and average annual removals of growing stock on timberland by ownership class and species group, West Tennessee, 1989*

	Growth						Removals					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet											
Other public	7.2	-0.1	0.7	0.1	4.4	2.0	...	...	...	...	...	...
Forest industry	6.3	0.5	1.4	0.7	0.5	3.2	5.4	0.8	0.7	0.2	1.5	2.1
Forest industry-leased	1.9	...	...	...	0.6	1.3	...	...	...	...	...	...
Other private	98.8	1.1	5.7	1.1	38.3	52.6	29.3	2.8	1.3	0.2	8.8	16.1
All ownerships	114.1	1.6	7.8	1.9	43.8	59.1	34.6	3.6	2.0	0.4	10.3	18.3

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 24–*Average net annual growth and average annual removals of sawtimber on timberland by ownership class and species group, West Tennessee, 1989*

Ownership class	Growth						Removals					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million board feet											
Other public	29.2	-2.3	0.2	0.5	19.9	10.8	...	...	...	...		
Forest industry	14.5	0.7	0.8	2.7	-4.5	14.9	16.1	...	2.6	1.1	5.0	7.5
Forest industry-leased	6.9	...	...	...	1.4	5.4	...	...	...	...	...	...
Other private	407.1	8.6	19.5	2.7	157.1	219.3	120.1	5.7	5.7	0.3	34.4	74.1
All ownerships	457.6	7.0	20.5	5.9	173.8	250.4	136.3	5.7	8.2	1.3	39.4	81.5

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 25–*Volume of sawtimber on timberland by species and tree grade, West Tennessee, 1989*

Species	All grades	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
	Million board feet					
Yellow pines	815.3	93.5	107.3	609.9	...	4.6
Cypress	334.3	90.8	80.9	159.6		3.1
Redcedar	43.8	32.7	...	...		11.2
Total softwoods	1193.4	217.0	188.1	769.4	...	18.9
Select white-red oaks	1669.1	269.4	371.0	600.9	325.1	102.8
Other white-red oaks	2070.1	204.0	307.6	832.7	585.9	139.8
Hickory	676.8	38.4	122.0	268.7	210.5	37.3
Hard maple	73.9	...	...	27.5	38.7	7.6
Sweetgum	1170.3	142.7	244.9	497.4	201.9	83.4
Tupelo and blackgum	206.3	8.4	25.4	106.6	43.1	22.7
Ash-walnut-black cherry	424.6	44.8	104.7	161.3	80.7	33.1
Yellow-poplar	768.7	102.4	171.6	251.7	211.8	31.1
Other hardwoods	1348.4	217.2	122.2	339.7	472.2	197.1
Total hardwoods	8408.1	1027.3	1469.3	3086.5	2170.0	655.0
All species	9601.6	1244.3	1657.5	3855.9	2170.0	673.8

Supplemental Tables 26-40

Table 26–*Area of timberland by stand age, forest type group and type of regeneration, West Tennessee, 1989*

Stand age class	Pine		Oak-pine		Other hardwood types	
	Artificial	Natural	Artificial	Natural	Artificial	Natural
	Thousand acres					
1-10	6.2	—	..	5.0	11.9	25.2
11-20	—	—	16.9	...	...	8.1
21-30	13.6	5.8	...	...		
31-40	17.1	—	—	..	...	
41-50	—	—	—		.	.
>50	6.2		...	.	.	6.1
Mixed	22.9	108.0	11.9	114.1	6.6	1584.6
Total	66.0	113.7	28.8	119.0	18.5	1624.0

Table 27–*Volume of softwood growing stock on timberland by forest type, West Tennessee, 1989*

County	Total	Forest type group					
		Loblolly-shortleaf pine					
		Planted	Natural	Oak-pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood
	Million cubic feet						
Carroll	18.7	7.1	.	5.7	5.9	...	...
Chester	30.6	9.5	2.0	16.4	2.8	...	—
Dyer[1]	24.0	.	..	...	...	24.0	...
Fayette	20.7	.	14.3	2.7	3.7	..	—
Hardeman	58.6	26.7	15.4	7.6	6.9	2.1	—
Haywood	—	.	...	...	...	...	.
Henderson	39.5	26.9	10.7	1.3	0.3	0.2	.
Henry	2.9	2.2		..	0.6	.	...
Lauderdale[2]	20.0	.	...	...	...	16.6	3.4
McNairy	78.5	3.8	54.7	15.7	3.7	0.6	..
Madison	8.1		3.2	2.3	1.8	0.8	..
Obion	12.9	.	.	...	...	12.9	..
Shelby	1.7	.	.	...	0.4	1.3	
Weakley	20.8	16.0	..	...	0.9	3.8	...
All counties	336.9	92.2	100.2	51.7	27.1	62.3	3.4

[1] Crockett, Gibson, and Lake included in Dyer.

[2] Tipton included in Lauderdale.

Table 28–*Volume of hardwood growing stock on timberland by forest type, West Tennessee, 1989*

County	Total	Forest type group Loblolly-shortleaf pine Planted	 Natural	 Oak-pine	 Oak-hickory	 Oak-gum-cypress	 Elm-ash-cottonwood
	Million cubic feet						
Carroll	233.7	1.1	...	6.8	170.9	54.9	...
Chester	73.4	0.8	0.4	17.5	50.4	3.9	0.3
Dyer[1]	168.7	...	...	...	109.2	59.5	...
Fayette	180.9	...	6.8	7.8	138.6	27.8	...
Hardeman	239.1	1.4	2.1	11.6	176.9	47.1	...
Haywood	122.5	...	...	...	9.7	112.8	...
Henderson	175.0	3.5	10.0	3.8	115.8	41.9	...
Henry	228.2	0.6	...	...	160.0	67.5	...
Lauderdale[2]	199.5	...	...	...	97.6	59.1	42.8
McNairy	154.7	0.3	10.6	20.9	98.2	24.7	...
Madison	201.1	...	0.7	8.8	115.6	76.0	...
Obion	128.5	...	...	...	71.1	57.4	...
Shelby	187.4	...	...	...	98.0	80.5	8.9
Weakley	118.9	0.9	...	...	45.9	72.1	...
All counties	2411.6	8.6	30.6	77.2	1457.9	785.4	51.9

[1] Crockett, Gibson, and Lake included in Dyer.
[2] Tipton included in Lauderdale.

Table 29–*Volume of softwood growing stock in the saw-log portion of sawtimber trees on timberland by forest type, West Tennessee, 1989*

County	Total	Forest type group Loblolly-shortleaf pine Planted	 Natural	 Oak-pine	 Oak-hickory	 Oak-gum-cypress	 Elm-ash-cottonwood
	Million cubic feet						
Carroll	13.5	5.5	...	4.4	3.6	...	...
Chester	20.7	6.7	0.8	11.2	2.0	...	...
Dyer[1]	23.0	...	...	...	...	23.0	...
Fayette	8.5	...	5.8	0.9	1.8	...	...
Hardeman	35.0	17.6	9.8	2.6	3.7	1.3	...
Haywood	...	...	...	...	...	...	...
Henderson	20.5	14.4	5.2	0.9	...	...	...
Henry	1.8	1.8	...	...	...	...	...
Lauderdale[2]	17.9	...	...	...	...	14.6	3.4
McNairy	41.0	0.3	32.0	6.4	1.8	0.6	...
Madison	4.0	...	2.2	0.3	1.0	0.5	...
Obion	11.7	...	...	...	...	11.7	...
Shelby	1.5	...	...	...	0.4	1.1	...
Weakley	13.4	9.6	...	...	0.5	3.3	...
All counties	212.7	55.9	55.8	26.6	14.7	56.3	3.4

[1] Crockett, Gibson, and Lake included in Dyer.
[2] Tipton included in Lauderdale.

Table 30–*Volume of hardwood growing stock in the saw-log portion of sawtimber trees on timberland by forest type, West Tennessee, 1989*

County	Total	Forest type group: Loblolly-shortleaf pine: Planted	Loblolly-shortleaf pine: Natural	Oak-pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood
	Million cubic feet						
Carroll	121.2	0.8	...	4.8	90.8	24.8	...
Chester	33.2	0.5	0.4	8.6	22.1	1.6	...
Dyer[1]	117.4	...	...	...	73.9	43.5	...
Fayette	101.4	...	1.2	4.5	82.6	13.2	...
Hardeman	128.5	0.4	0.9	5.4	96.0	25.8	...
Haywood	81.2	...	...	...	6.6	74.5	...
Henderson	92.0	1.7	3.6	1.1	61.0	24.6	...
Henry	142.1	...	...	...	93.3	48.8	...
Lauderdale[2]	135.1	...	...	...	66.3	42.8	26.1
McNairy	66.3	0.2	3.1	7.2	46.8	9.1	...
Madison	120.3	...	...	2.9	68.4	49.0	...
Obion	92.8	...	...	...	55.0	37.8	...
Shelby	111.4	...	...	...	61.6	44.0	5.8
Weakley	76.1	...	...	...	27.2	48.9	...
All counties	1419.1	3.6	9.1	34.4	851.6	488.5	31.9

[1] Crockett, Gibson, and Lake included in Dyer.
[2] Tipton included in Lauderdale.

Table 31–*Volume of timber on timberland by county, class of timber and species group, West Tennessee, 1989*

County	All classes	Growing stock: Softwood	Growing stock: Hardwood	Rough: Softwood	Rough: Hardwood	Rotten: Softwood	Rotten: Hardwood
	Million cubic feet						
Carroll	272.2	18.7	233.7	0.1	18.8	...	0.8
Chester	109.7	30.6	73.4	1.0	4.0	...	0.6
Dyer[1]	209.0	24.0	168.7	...	16.4	...	
Fayette	228.4	20.7	180.9	2.7	18.6	...	5.4
Hardeman	329.5	58.6	239.1	1.1	26.3	...	4.5
Haywood	130.5	...	122.5	...	6.6	...	1.3
Henderson	251.5	39.5	175.0	2.7	25.8	0.6	7.8
Henry	256.5	2.9	228.2	0.3	19.5	...	5.6
Lauderdale[2]	252.4	20.0	199.5	1.9	15.6	1.7	13.7
McNairy	251.8	78.5	154.7	1.6	13.5	...	3.5
Madison	223.7	8.1	201.1	0.7	11.9	...	1.9
Obion	153.6	12.9	128.5	0.8	9.5	...	1.9
Shelby	215.9	1.7	187.4	0.4	24.5	...	1.9
Weakley	159.8	20.8	118.9	0.4	13.9	...	5.8
All counties	3044.6	336.9	2411.6	13.8	225.0	2.3	54.9

[1] Crockett, Gibson, and Lake included in Dyer.
[2] Tipton included in Lauderdale.

Table 32–*Number of live trees on timberland by detailed species and diameter class, West Tennessee, 1989*

Species	All classes	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Shortleaf pine	33590	10733	10770	3822	3321	1773	1837	794	426	74	31	8	...
Loblolly pine	36329	10547	7258	8957	4356	2950	1241	815	109	71	23	...	...
Virginia pine	456	456	...	...	...	...	...	...	...	...	...	...	...
Redcedar	60837	35918	16841	5161	1626	776	389	86	...	39	...	...	...
Cypress	1814	...	563	...	196	136	31	143	176	104	109	239	116
Total softwoods	133026	57655	35433	17941	9500	5636	3499	1839	710	288	163	246	116
Select white oaks	67394	34633	14306	6012	3506	2894	2127	1476	801	735	380	482	42
Select red oaks	16957	4407	2573	1930	2505	1582	991	978	686	366	321	525	94
Other white oaks	31670	15159	4337	3767	2295	2344	1239	1327	502	305	177	214	4
Other red oaks	67771	25296	11103	6119	6324	6626	3748	3324	2011	1602	654	806	159
Sweet pecan	799	676	...	...	...	51	...	32	21	...	...	13	5
Water hickory	198	...	...	...	...	59	72	53	...	13	...		
Other hickories	73274	44473	10803	5558	3988	3128	2237	1562	720	466	195	142	
Persimmon	17032	10892	3385	1783	711	122	67	21	31	...	20	...	
Hard maple	18129	9240	5036	1716	885	476	261	261	113	85	...	53	4
Soft maple	68457	39628	12351	6939	3622	2736	1266	778	466	384	93	167	26
Boxelder	15264	7762	1865	2135	1857	965	366	140	146	28	...	...	...
Beech	12614	7100	2253	1151	432	296	409	318	130	179	125	168	53
Sweetgum	90410	47709	17265	7955	4608	5083	3092	2001	1529	483	347	292	47
Blackgum	45274	32415	3595	3741	2332	1322	1008	426	263	74	79	17	...
Other gums/tupelos	3506	1759	563	214	421	131	58	170	64	68	40	17	...
White ash	9493	6044	528	1429	440	348	334	165	71	51	51	26	6
Other ashes	22063	11297	2789	2370	1491	2043	902	398	382	263	103	25	...
Sycamore	4559	1159	1723	249	140	430	101	235	147	80	84	153	59
Cottonwood	1318	...	602	274	...	48	62	21	78	55	22	69	86
Basswood	753	598	...	155	...	...	...	...	...	...	...	...	...
Yellow-poplar	27948	12933	4746	1859	2360	1674	1449	1073	788	404	358	290	13
Magnolia	18	...	...	...	...	...	...	...	...	18	...	...	...
Sweetbay	343	...	...	305	...	38	...	...	...	...	...	...	...
Willow	7845	2984	1054	1267	869	823	251	212	66	84	72	135	28
Black walnut	763	...	...	100	236	182	145	48	43	...	10	...	...
Black cherry	26642	13806	8728	2364	924	376	212	62	100	42	10	17	...
American elm	19131	10604	3882	2030	942	839	261	311	178	24	24	32	3
Other elms	66382	51879	6991	3836	2120	823	397	231	32	43	10	15	4
River birch	5659	2328	...	1711	449	448	339	156	83	70	44	30	...
Hackberry	6796	2686	1945	231	538	591	241	349	123	49	33	...	9
Black locust	1862	1565	...	...	88	...	66	40	48	25	21	8	...
Other locusts	1276	566	...	...	362	83	124	95	17	14	...	14	...
Sassafras	13440	9275	2993	1023	63	86	...	...	...	...	...	...	...
Dogwood	84161	63336	16806	3310	606	102	...	...	...	...	...	...	...
Holly	5442	5232	...	...	76	78	56	...	...	...	...	...	...
Other commercial	5870	3517	1308	207	590	52	158	20	16	...	...		...
Total hardwoods	840512	480959	143529	71741	45779	36881	22043	16285	9656	6010	3273	3710	644
Noncommercial	99206	76691	13226	4730	3008	882	450	45	44	53	59	19	
All species	1072743	615306	192187	94413	58287	43398	25992	18169	10410	6351	3495	3975	760

Table 33—*Number of growing-stock trees on timberland by detailed species and diameter class, West Tennessee, 1989*

Species	All classes	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Diameter class (inches at breast height)										
	Thousand trees										
Shortleaf pine	11825	3705	3203	1773	1837	794	411	74	20	8	...
Loblolly pine	17010	7852	4145	2753	1241	815	109	71	23	...	...
Redcedar	5845	3524	1359	520	338	65	...	39	...	...	...
Cypress	1085	...	121	136	31	118	139	88	109	239	104
Total softwoods	35765	15081	8828	5183	3448	1792	659	272	152	246	104
Select white oaks	16349	4555	3273	2742	2101	1476	726	663	349	437	25
Select red oaks	9712	1930	2505	1486	991	892	671	353	321	498	66
Other white oaks	10455	3065	1910	2187	1205	1105	445	266	136	131	4
Other red oaks	28960	5218	6263	6291	3455	3135	1773	1415	603	695	113
Sweet pecan	123	...	...	51	...	32	21	...	...	13	5
Water hickory	185	...	...	59	72	53	...	...	...	...	...
Other hickories	16096	4618	3857	2855	1978	1445	688	375	171	108	...
Persimmon	2604	1684	660	122	67	21	31	...	20	...	...
Hard maple	2901	1103	885	394	117	240	63	69	...	29	...
Soft maple	10088	4053	1949	1895	900	550	262	259	69	132	20
Boxelder	2837	958	850	634	185	90	91	28	...	...	...
Beech	2418	762	432	254	303	209	97	138	80	110	32
Sweetgum	23046	6760	4138	4728	2967	1930	1443	444	337	252	47
Blackgum	6611	2560	1468	944	917	340	212	74	79	17	...
Other gums/tupelos	883	126	285	131	...	170	64	68	30	9	...
White ash	2606	1218	385	348	308	141	71	51	51	26	6
Other ashes	6014	1547	936	1605	830	376	359	263	80	18	...
Sycamore	1233	154	69	244	101	235	115	68	84	136	27
Cottonwood	703	274	...	48	62	21	78	42	22	69	86
Basswood	155	155	...	...	...	...	...	...	...	...	...
Yellow-poplar	9843	1771	2160	1674	1449	1012	757	392	349	275	5
Magnolia	18	...	...	...	...	...	...	18	...		
Sweetbay	246	208	...	38	...	...	...	...	...		
Willow	3489	1267	750	776	251	183	31	36	60	117	18
Black walnut	621	100	147	182	91	48	43	...	10	...	...
Black cherry	3024	1650	858	290	60	41	67	42	...	17	...
American elm	3294	1027	865	755	261	178	141	24	24	17	3
Other elms	5196	1826	1970	728	397	207	16	30	10	8	4
River birch	2832	1464	378	317	307	156	83	70	34	23	
Hackberry	1192	114	197	366	136	196	105	49	20	...	9
Black locust	140	...	...	...	31	40	15	25	21	8	...
Other locusts	520	...	233	83	124	35	17	14	...	14	...
Sassafras	968	866	63	39	...	...	...	...	...	...	
Dogwood	854	802	52	...	...	...	...	...	...	...	...
Holly	76	...	76	...	...	...	...	...	...	...	...
Other commercial	459	207	176	...	60	...	16	...	...	...	
Total hardwoods	176749	52041	37788	32267	19730	14557	8500	5274	2961	3160	472
All species	212514	67122	46616	37450	23178	16349	9159	5545	3113	3406	576

Table 34–*Volume of growing-stock trees on timberland by detailed species and diameter class, West Tennessee, 1989*

Species	All classes	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Diameter class (inches at breast height)										
	Million cubic feet										
Shortleaf pine	127.7	9.9	20.2	21.3	36.0	21.8	14.2	2.9	1.0	0.4	...
Loblolly pine	119.5	18.6	24.7	29.2	19.5	18.2	4.2	3.6	1.4	...	...
Redcedar	24.3	6.9	6.5	4.3	4.2	1.2	...	1.1	...	...	...
Cypress	65.5	...	0.9	2.1	0.4	2.7	4.7	4.5	6.2	24.6	19.5
Total softwoods	336.9	35.5	52.2	56.9	60.2	43.9	23.1	12.1	8.7	25.0	19.5
Select white oaks	248.4	11.5	20.6	30.7	38.4	39.1	24.9	30.5	18.5	31.8	2.5
Select red oaks	183.6	5.3	14.5	15.2	18.2	23.2	24.6	15.3	17.1	40.4	9.9
Other white oaks	116.6	7.2	9.6	21.2	19.0	22.7	12.5	9.5	6.4	7.9	0.5
Other red oaks	462.0	14.5	35.3	67.4	57.5	69.6	55.0	61.8	33.0	51.4	16.4
Sweet pecan	3.9	...	...	0.3	...	0.7	0.6	...	...	1.3	1.0
Water hickory	2.9	...	...	0.7	1.3	0.9	...	...	...	...	...
Other hickories	198.3	11.2	21.8	32.6	36.6	36.4	23.7	17.1	10.1	8.9	...
Persimmon	13.4	4.0	3.4	1.4	1.3	0.7	1.2	...	1.4	...	...
Hard maple	28.7	2.9	5.5	4.8	2.7	5.3	2.5	2.8	...	2.2	...
Soft maple	102.2	10.3	11.4	21.5	14.5	12.7	8.3	9.9	3.2	9.2	1.3
Boxelder	22.0	2.3	5.3	5.9	2.6	1.7	3.3	1.0	...	...	...
Beech	41.3	2.1	2.4	2.7	5.6	5.3	2.9	5.4	4.5	7.3	3.0
Sweetgum	331.0	14.0	25.7	53.8	57.7	53.2	54.6	23.3	19.7	22.3	6.6
Blackgum	60.3	6.5	8.0	8.9	15.0	7.1	6.9	3.1	3.8	1.0	...
Other gums/tupelos	12.5	0.3	1.3	1.4	...	4.2	1.7	2.1	1.2	0.4	...
White ash	29.8	2.6	2.3	3.4	5.7	4.6	2.4	2.3	3.1	2.1	1.3
Other ashes	86.5	4.1	7.3	19.5	15.8	10.9	11.4	12.5	4.0	1.0	...
Sycamore	37.9	0.4	0.6	2.8	2.0	6.1	4.0	2.7	5.0	10.5	3.7
Cottonwood	33.5	0.4	...	0.4	1.2	0.7	3.4	2.2	1.5	7.0	16.8
Basswood	0.2	0.2	...	...	...	...	...	...	...	...	...
Yellow-poplar	187.4	4.6	13.9	18.7	26.2	28.2	29.3	20.2	21.8	24.2	0.3
Magnolia	0.8	...	...	...	...	...	...	0.8	...	...	...
Sweetbay	1.2	0.7	...	0.4	...	...	...	...	...	...	...
Willow	41.5	2.8	4.1	8.9	4.0	4.3	1.2	1.7	3.7	9.5	1.4
Black walnut	7.4	0.3	1.2	1.6	1.6	1.2	0.9	...	0.6	...	
Black cherry	18.2	4.6	4.2	3.2	0.6	1.0	1.6	2.0	...	1.0	
American elm	34.2	3.4	5.1	7.7	4.2	4.7	4.5	0.9	1.4	1.9	0.5
Other elms	39.0	5.5	10.6	8.5	6.2	4.9	0.6	1.2	0.7	0.1	0.7
River birch	29.9	5.0	2.9	4.0	5.1	4.1	2.6	3.0	1.7	1.6	
Hackberry	18.3	0.4	1.1	3.9	2.6	3.9	3.1	1.9	0.9	...	0.6
Black locust	4.1	...	...	...	0.5	1.0	0.5	0.6	1.2	0.3	...
Other locusts	7.4	...	0.9	1.0	2.7	0.5	0.6	0.6	...	1.1	...
Sassafras	3.2	2.5	0.4	0.4	...	...	...	...	...	...	...
Dogwood	1.5	1.2	0.3	...	...	...	...	...	...	...	...
Holly	0.3	...	0.3	...	...	...	...	...	...	...	...
Other commercial	2.3	0.6	0.5	...	0.9	...	0.3	...	...	...	...
Total hardwoods	2411.6	131.4	220.6	352.8	349.8	359.0	288.9	234.1	164.5	244.3	66.3
All species	2748.6	166.9	272.8	409.7	409.9	402.9	312.0	246.3	173.1	269.3	85.8

Table 35–*Volume of growing stock in the saw-log portion of sawtimber trees on timberland by detailed species and diameter class, West Tennessee, 1989*

Species	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet								
Shortleaf pine	82.9	17.1	31.5	18.7	12.2	2.5	0.7	0.3	...
Loblolly pine	61.2	21.4	16.2	15.6	3.6	3.1	1.3	...	...
Redcedar	9.0	3.4	3.5	1.1	...	1.0	...	...	...
Cypress	59.6	1.7	0.3	2.1	3.9	4.0	5.9	23.1	18.6
Total softwoods	212.7	43.6	51.4	37.5	19.7	10.6	7.9	23.4	18.6
Select white oaks	152.7	...	28.4	32.2	21.1	26.2	16.2	26.4	2.3
Select red oaks	124.0	...	14.2	18.7	21.3	12.7	14.0	35.2	7.9
Other white oaks	65.1	...	15.0	19.0	10.8	8.1	5.3	6.5	0.4
Other red oaks	286.7	...	42.0	56.8	47.6	54.2	28.4	43.8	13.9
Sweet pecan	2.7	...	...	0.6	0.5	...	...	0.9	0.7
Water hickory	1.7	...	1.0	0.7	...	...	...	...	...
Other hickories	108.6	...	26.9	29.8	20.7	14.2	9.1	8.0	...
Persimmon	3.9	...	0.9	0.6	1.1	...	1.3	...	...
Hard maple	12.3	...	1.5	4.3	2.1	2.2	...	2.1	...
Soft maple	48.3	...	10.5	10.1	7.0	8.8	2.9	8.0	1.2
Boxelder	6.7	...	1.9	1.4	2.6	0.8	...	...	...
Beech	28.7	...	4.2	4.3	2.6	4.2	3.6	6.9	2.9
Sweetgum	198.8	...	41.5	44.3	47.6	21.1	17.8	20.7	5.8
Blackgum	30.0	...	10.8	6.0	6.1	2.6	3.5	1.0	...
Other gums/tupelos	7.5	...	...	3.2	1.3	1.8	1.0	0.3	...
White ash	18.7	...	4.3	4.1	2.1	2.0	2.8	1.9	1.3
Other ashes	45.4	...	11.1	9.1	9.8	10.8	3.7	0.9	...
Sycamore	29.0	...	1.4	4.7	3.6	2.6	4.1	9.4	3.3
Cottonwood	29.7		1.0	0.6	3.0	2.0	1.3	6.5	15.3
Yellow-poplar	127.3	...	19.3	23.7	26.0	18.3	19.2	20.6	0.3
Magnolia	0.5	...	...	...	...	0.5	...	...	...
Willow	22.4		2.9	3.4	1.0	1.3	3.6	8.8	1.4
Black walnut	3.6		1.3	0.9	0.8	...	0.6	...	
Black cherry	5.2	...	0.3	0.8	1.4	1.7	...	0.9	...
American elm	14.7	...	3.0	3.8	3.8	0.7	1.3	1.6	0.4
Other elms	10.9	...	4.1	3.8	0.5	1.1	0.7	0.1	0.7
River birch	14.3	...	3.8	3.5	2.0	2.3	1.3	1.4	...
Hackberry	10.7	...	2.2	3.1	2.5	1.5	0.7	...	0.6
Black locust	3.5	...	0.5	0.8	0.2	0.5	1.1	0.3	...
Other locusts	4.2	...	1.9	0.5	0.5	0.5	...	0.8	...
Other commercial	1.0	...	0.7	...	0.3	...	...	...	...
Total hardwoods	1419.1	...	256.7	294.7	250.0	202.6	143.4	213.2	58.5
All species	1631.8	43.6	308.1	332.2	269.7	213.2	151.3	236.6	77.1

Table 36–*Volume of timber on timberland by species and class of timber, West Tennessee, 1989*

Species	All live	Growing stock	Rough	Rotten
	Million cubic feet			
Shortleaf pine	129.4	127.7	1.7	...
Loblolly pine	122.7	119.5	3.2	...
Redcedar	31.1	24.3	6.2	0.6
Cypress	69.8	65.5	2.7	1.7
Total softwoods	353.0	336.9	13.8	2.3
Select white oaks	261.8	248.4	12.1	1.3
Select red oaks	188.7	183.6	3.8	1.3
Other white oaks	129.1	116.6	9.9	2.6
Other red oaks	491.7	462.0	23.4	6.3
Sweet pecan	3.9	3.9	...	...
Water hickory	3.5	2.9	0.6	...
Other hickories	211.7	198.3	10.7	2.7
Persimmon	13.6	13.4	0.3	...
Hard maple	35.9	28.7	6.6	0.5
Soft maple	137.3	102.2	27.0	8.1
Boxelder	34.2	22.0	11.8	0.4
Beech	54.3	41.3	7.6	5.4
Sweetgum	347.5	331.0	12.2	4.3
Blackgum	72.2	60.3	10.5	1.3
Other gums/tupelos	14.4	12.5	1.4	0.5
White ash	31.2	29.8	1.0	0.5
Other ashes	95.9	86.5	8.4	1.0
Sycamore	51.7	37.9	3.0	10.8
Cottonwood	33.9	33.5	0.5	...
Basswood	0.2	0.2	...	...
Yellow-poplar	192.3	187.4	2.6	2.3
Magnolia	0.8	0.8	...	...
Sweetbay	1.5	1.2	0.4	...
Willow	46.3	41.5	3.7	1.2
Black walnut	8.3	7.4	0.7	0.1
Black cherry	22.4	18.2	2.5	1.7
American elm	40.5	34.2	5.8	0.5
Other elms	43.8	39.0	4.7	...
River birch	33.0	29.9	2.8	0.3
Hackberry	25.7	18.3	7.1	0.3
Black locust	4.5	4.1	0.3	...
Other locusts	8.8	7.4	0.9	0.5
Sassafras	3.7	3.2	0.5	...
Dogwood	6.8	1.5	4.9	0.4
Holly	1.2	0.3	0.8	0.2
Other commercial	4.5	2.3	2.1	0.1
Total hardwoods	2657.0	2411.6	190.5	54.9
Noncommercial	34.6	...	34.6	..
All species	3044.6	2748.6	238.8	57.2

Table 37–*Volume of sawtimber for tree grade 1 on timberland by detailed species and diameter class, West Tennessee, 1989*

Species	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Shortleaf pine	77.1	5.6	19.1	22.6	27.3	2.5	...	...	...
Loblolly pine	16.5	0.6	4.3	11.6	...	...	...	...	...
Redcedar	32.7	14.4	14.5	3.8	...	...	...	...	...
Cypress	90.8	...	...	...	7.3	8.3	20.4	54.8	...
Total softwoods	217.0	20.5	37.9	38.0	34.6	10.8	20.4	54.8	
Select white oaks	110.2	...	...	...	...	43.6	13.9	47.0	5.7
Select red oaks	159.2	...	...	...	5.9	5.8	9.7	106.5	31.3
Other white oaks	26.2	...	...	...	5.2	2.4	3.1	15.5	...
Other red oaks	177.8	...	...	...	...	36.6	9.3	85.7	46.3
Sweet pecan	11.7	...	...	...	...	...	...	6.3	5.5
Other hickories	26.6	...	...	...	2.2	12.0	9.4	3.0	
Soft maple	8.9	...	...	...	3.2	2.2	...	3.4	
Boxelder	12.5	...	...	...	9.5	3.0	...	...	
Sweetgum	142.7	...	...	...	51.4	14.7	31.4	32.4	12.8
Blackgum	8.4	...	...	...	...	2.0	4.5	1.9	
White ash	7.9	...	...	...	...	...	3.3	4.7	
Other ashes	36.8	...	...	...	3.2	27.2	2.9	3.6	...
Sycamore	42.0	...	...	...	...	3.3	3.7	25.7	9.3
Cottonwood	120.3	...	...	...	5.3	4.9	4.3	25.4	80.4
Yellow-poplar	102.4	...	...	...	15.5	9.3	28.4	49.2	
Willow	5.3	...	...	...	...	...	...	5.3	
American elm	14.0	...	...	...	...	4.5	3.6	5.9	
River birch	14.1	...	...	...	...	1.6	4.2	8.3	
Total hardwoods	1027.3	...	...	...	101.6	173.1	131.7	429.7	191.3
All species	1244.3	20.5	37.9	38.0	136.2	183.8	152.1	484.5	191.3

Table 38–*Volume of sawtimber for tree grade 2 on timberland by detailed species and diameter class, West Tennessee, 1989*

Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Diameter class (inches at breast height)								
	Million board feet								
Shortleaf pine	26.0	2.4	13.5	2.6	7.4	...	...	...	
Loblolly pine	81.3	13.6	15.7	17.4	16.7	17.9	...	...	...
Cypress	80.9	...	...	2.7	3.5	3.1	2.6	16.9	52.1
Total softwoods	188.1	16.0	29.3	22.7	27.7	21.0	2.6	16.9	52.1
Select white oaks	185.4	...	...	39.2	39.9	43.7	24.9	37.7	...
Select red oaks	185.6	...	...	21.9	47.0	13.8	36.9	55.5	10.6
Other white oaks	44.9	...	...	16.6	9.5	9.3	3.3	3.5	2.7
Other red oaks	262.7	...	...	28.6	65.2	94.5	26.4	40.5	7.5
Sweet pecan	2.7	...	...	...	2.7	...	...	...	
Other hickories	119.3	...	...	34.6	35.0	22.6	8.1	19.1	
Soft maple	18.0	...	...	7.5	3.8	4.4	...	2.2	
Beech	5.8	...	...	...	...	3.6	2.2	...	
Sweetgum	244.9	...	...	57.3	91.3	44.1	17.9	34.3	
Blackgum	25.4	...	...	8.3	14.4	2.7	...	...	
White ash	23.5	...	...	7.0	3.0	6.8	...	6.7	
Other ashes	63.8	...	...	26.5	16.0	18.5	2.9	...	
Sycamore	46.2	...	...	11.2	10.1	8.1	6.8	10.0	...
Cottonwood	16.9	...	...	...	4.2	3.0	...	9.7	
Yellow-poplar	171.6	...	...	18.7	35.5	37.5	37.6	40.3	2.0
Magnolia	3.4	...	...	...	...	3.4	...	...	...
Willow	11.4	...	...	3.8	...	3.8	...	3.9	
Black walnut	3.6	...	...	...	...	...	3.6	...	
Black cherry	13.7	...	...	...	3.2	10.6	...	...	
American elm	7.7	...	...	...	7.7	...	...	...	...
River birch	11.3	...	...	6.5	...	3.0	1.8	...	...
Black locust	1.5	...	...	...	...	1.5	...	...	...
Total hardwoods	1469.3	...	...	287.7	388.3	334.8	172.4	263.3	22.8
All species	1657.5	16.0	29.3	310.4	416.0	355.7	175.1	280.2	74.9

Table 39–*Volume of sawtimber for tree grade 3 on timberland by detailed species and diameter class, West Tennessee, 1989*

Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Shortleaf pine	376.0	84.3	147.1	86.6	39.5	11.8	4.7	1.9	...
Loblolly pine	233.9	91.7	65.1	59.8	5.6	3.1	8.6	...	...
Cypress	159.6	9.3	1.1	8.4	10.4	10.3	9.4	62.3	48.3
Total softwoods	769.4	185.3	213.3	154.9	55.5	25.2	22.8	64.3	48.3
Select white oaks	380.2	...	92.5	99.8	65.2	44.9	34.9	41.1	1.8
Select red oaks	220.7	...	37.2	59.0	30.6	38.7	27.4	25.2	2.6
Other white oaks	170.7	...	41.3	64.2	22.3	19.1	22.0	1.8	...
Other red oaks	662.0	...	138.0	157.5	145.0	87.3	66.9	64.0	3.2
Sweet pecan	3.5	...	...	3.5	...	...	...	...	...
Water hickory	3.6	...	1.2	2.4	...	...	...	...	...
Other hickories	261.5	...	81.2	88.1	34.9	26.2	18.3	12.9	...
Persimmon	11.0	...	4.6	...	6.3	...	...	...	...
Hard maple	27.5	...	...	10.8	9.4	...	...	7.3	...
Soft maple	83.0	...	18.2	22.9	6.6	20.3	4.1	7.8	3.1
Boxelder	3.3	...	1.8	...	1.5	...	...	...	...
Beech	17.9	...	...	3.4	2.2	...	5.0	7.3	...
Sweetgum	497.4	...	158.0	136.4	100.9	39.7	36.6	22.2	3.8
Blackgum	85.2	...	31.6	21.8	6.6	6.2	14.9	4.0	...
Other gums/tupelos	21.4	...	...	9.2	4.2	2.3	4.5	1.2	...
White ash	35.5	...	9.6	6.2	...	...	13.3	...	6.4
Other ashes	113.3	...	54.9	17.0	20.5	14.0	6.9	...	...
Sycamore	42.2	...	8.1	10.2	2.8	2.7	10.5	3.1	4.8
Cottonwood	20.3	...	2.9	3.9	...	4.0	3.5	3.0	3.0
Yellow-poplar	251.7	...	56.8	60.7	51.5	27.8	32.4	22.7	...
Willow	43.1	...	2.4	...	4.1	4.7	16.6	15.4	...
Black walnut	4.6	...	...	...	4.6	...	...	...	...
Black cherry	7.8	...	1.1	4.0	2.8	...	...	...	...
American elm	29.2	...	11.3	11.2	6.7	...	...	...	...
Other elms	30.6	...	11.5	12.2	2.9	...	4.0	...	...
River birch	27.8	...	11.5	4.9	5.6	3.5	2.3	...	...
Hackberry	22.0	...	3.8	6.1	7.9	4.1	...	...	...
Black locust	8.0	...	3.2	1.6	1.3	1.9	...	...	...
Other commercial	1.5	...	1.5	...	...	...	...	...	...
Total hardwoods	3086.5	...	784.0	817.0	546.4	347.3	324.1	239.0	28.7
All species	3855.9	185.3	997.3	971.8	601.9	372.4	346.9	303.3	77.0

Diameter class (inches at breast height)

Table 40–*Volume of sawtimber for tree grade 4 on timberland by detailed species and diameter class, West Tennessee, 1989*

Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Select white oaks	191.9	...	64.7	43.3	16.5	22.7	21.8	22.9	...
Select red oaks	133.2	...	42.5	24.0	27.3	9.1	10.5	14.3	5.4
Other white oaks	118.7	...	32.2	25.1	26.9	13.7	6.9	13.8	...
Other red oaks	467.3	...	80.7	115.5	49.2	100.4	60.2	51.4	10.0
Water hickory	5.8	...	4.7	1.1	...	...	...	...	...
Other hickories	204.6	...	68.4	45.8	41.3	25.0	18.8	5.4	...
Persimmon	12.4	...	...	3.7	...	...	8.7	...	
Hard maple	38.7	...	8.8	10.5	3.3	9.8	...	6.3	
Soft maple	114.3	...	27.1	16.3	22.0	11.5	12.4	25.0	...
Boxelder	22.9	...	9.7	6.2	5.0	1.9	...	...	...
Beech	99.7	...	21.1	15.1	11.8	18.1	16.0	17.6	...
Sweetgum	201.9	...	64.2	46.6	29.5	25.9	9.8	22.9	3.0
Blackgum	34.5	...	19.2	1.6	12.0	1.7	...	...	...
Other gums/tupelos	8.6	...	...	3.6	0.6	4.4	...	...	
White ash	39.2	...	13.9	13.5	10.0	1.7	...	...	...
Other ashes	24.2	...	4.2	3.6	13.4	3.0	...	...	...
Sycamore	27.4	...	...	4.2	3.5	...	...	12.7	7.0
Cottonwood	4.3	...	...	...	4.3	...	...	...	...
Yellow-poplar	211.8	...	47.4	58.3	48.6	27.6	12.8	17.1	...
Willow	61.0	...	9.4	15.9	2.9	...	2.6	24.3	5.9
Black walnut	13.0	...	7.6	5.4	...	...	...	...	
Black cherry	4.3	...	0.8	...	...	...	...	3.5	...
American elm	29.4	...	3.4	8.8	9.0	...	4.1	4.1	
Other elms	20.1	...	8.2	4.5	...	2.7	...	...	4.6
River birch	13.4	...	4.1	3.9	2.5	2.9	...	...	
Hackberry	31.4	...	4.4	11.3	2.3	5.3	4.2	...	4.0
Black locust	7.4	...	...	3.0	...	...	4.4	...	...
Other locusts	25.8	...	11.1	2.7	3.4	2.9	...	5.8	
Other commercial	2.8	...	2.8	...	...	...	...	...	
Total hardwoods	2170.0	...	560.5	493.6	345.3	290.5	193.0	247.2	39.9
All species	2170.0	...	560.5	493.6	345.3	290.5	193.0	247.2	39.9

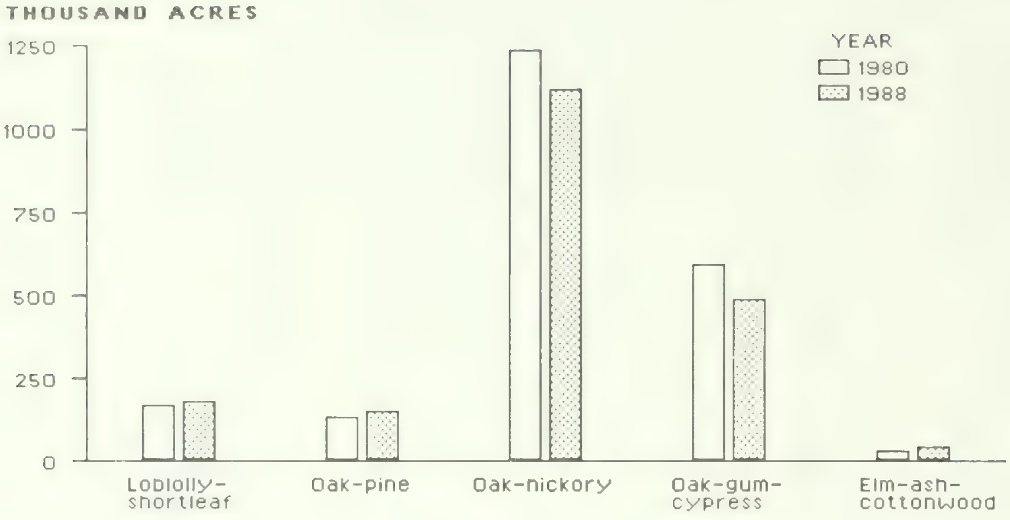

Figure 1.--Area of timberland by forest type, West Tennessee, 1980 and 1988.

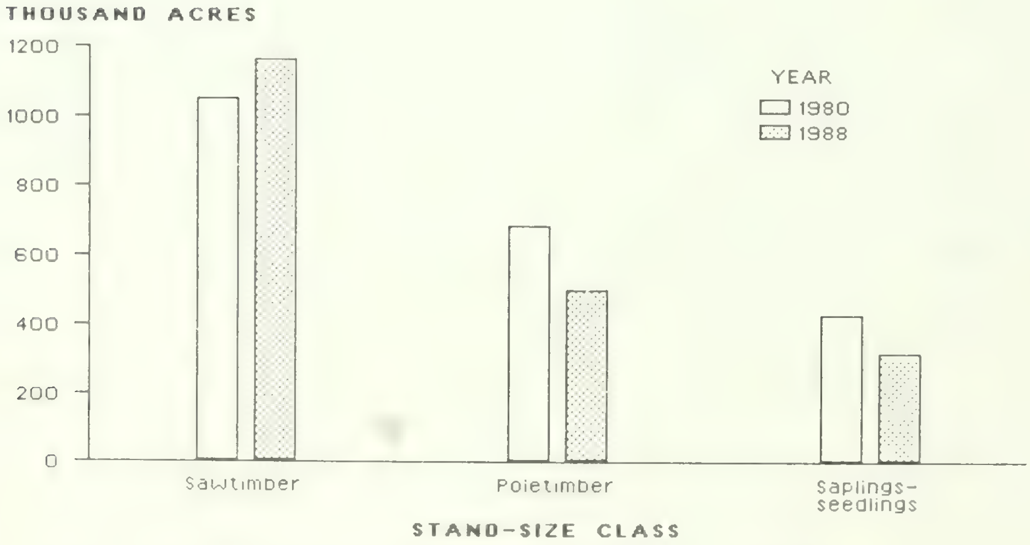

Figure 2.--Area of timberland by stand-size class, West Tennessee, 1980 and 1988

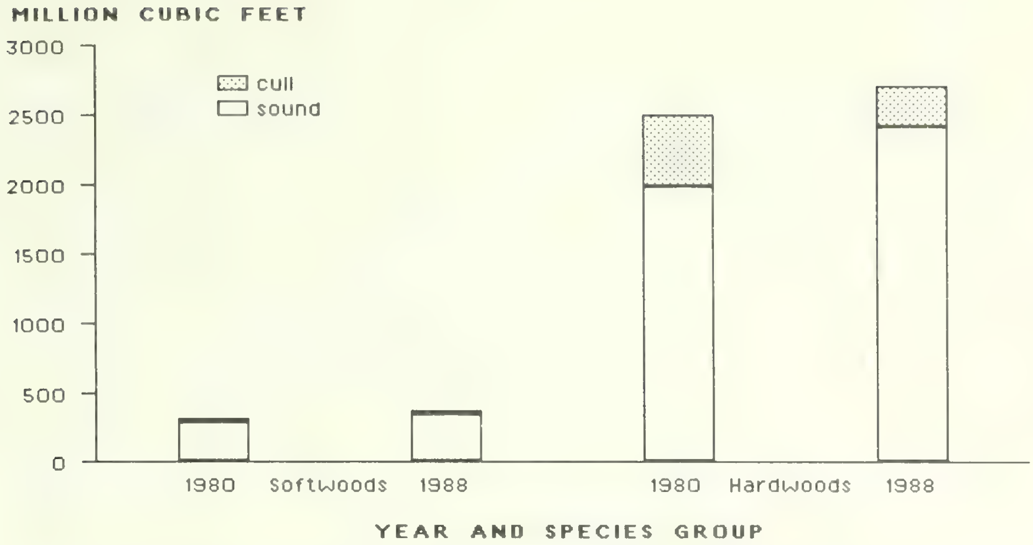

Figure 3.--Volume of timber on timberland by species group and class of timber, West Tennessee, 1980 and 1988.

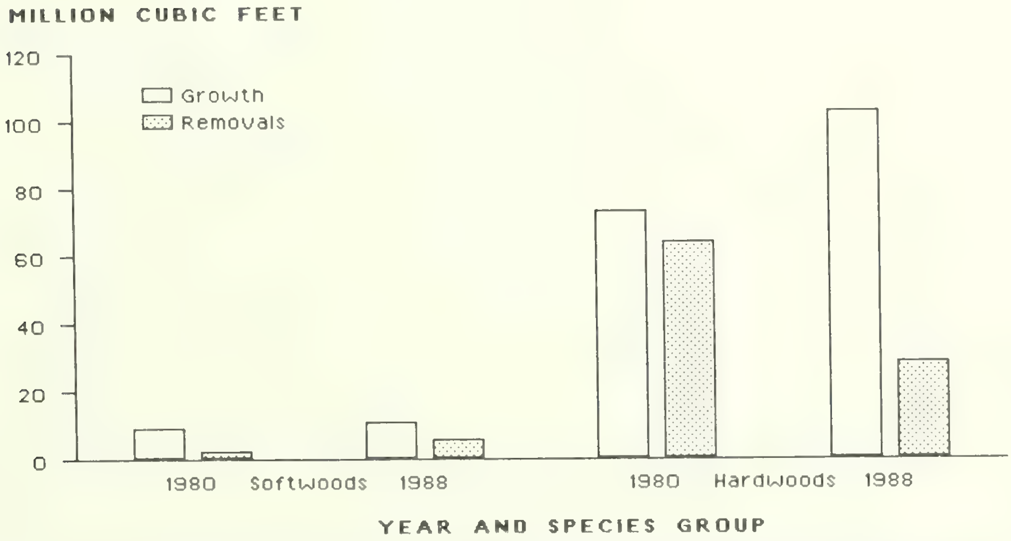

Figure 4.--Average net annual growth and average annual removals of growing stock on timberland by species group, West Tennessee, 1980 and 1988.

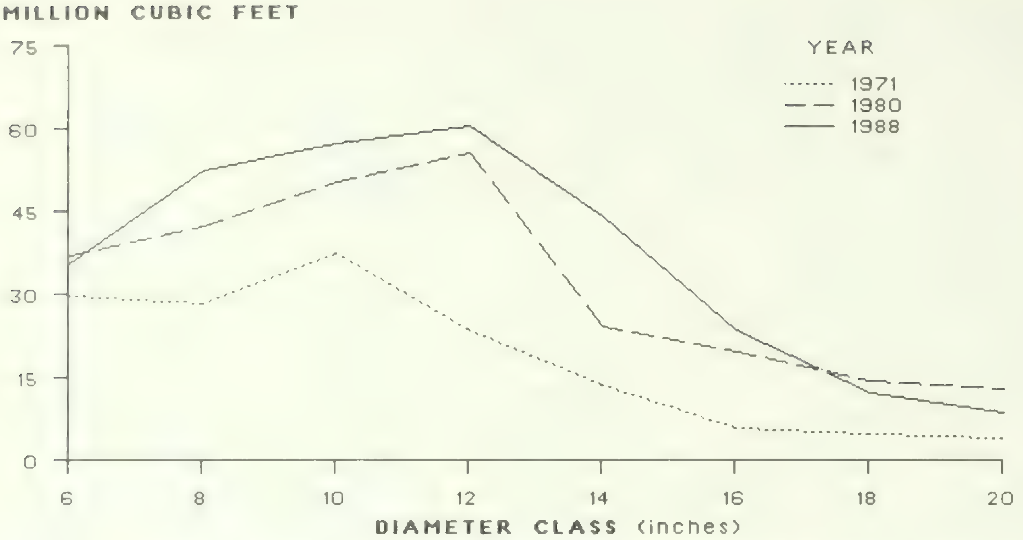

Figure 5.--Volume of softwood growing stock on timberland by diameter class, West Tennessee, 1971, 1980, and 1988.

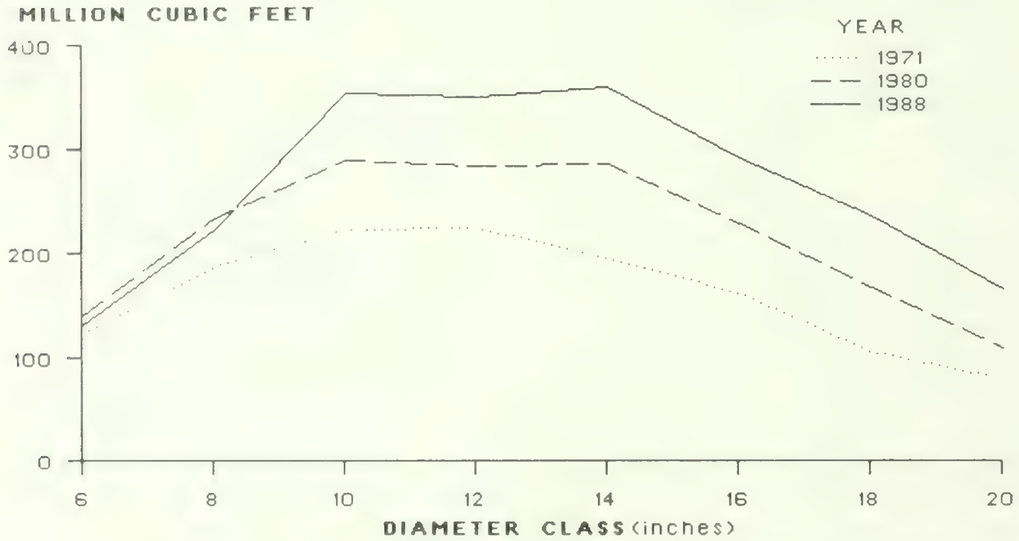

Figure 6.--Volume of hardwood growing stock on timberland by diameter class, West Tennessee, 1971, 1980, and 1988.

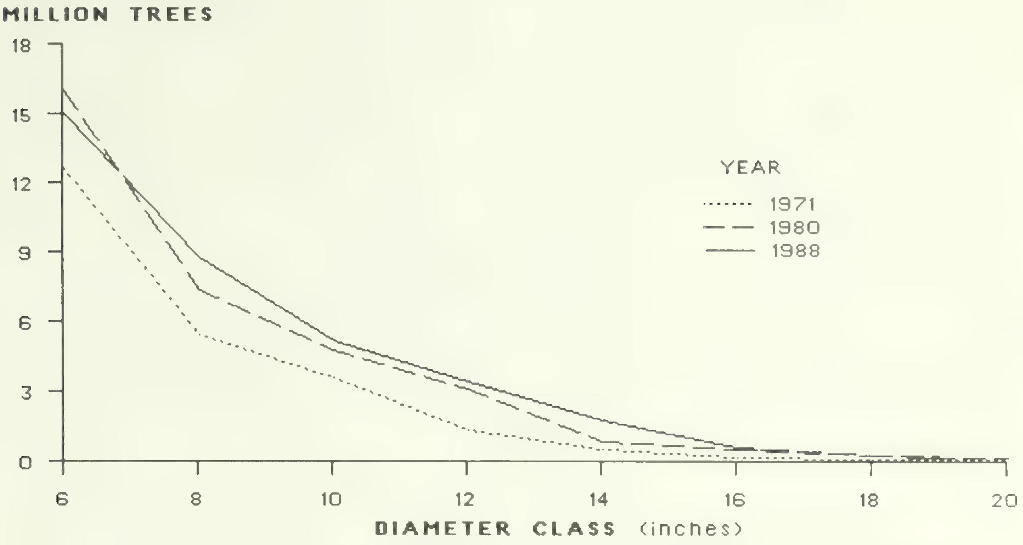

Figure 7.--Number of softwood growing-stock trees on timberland by diameter class, West Tennessee, 1971, 1980, and 1988.

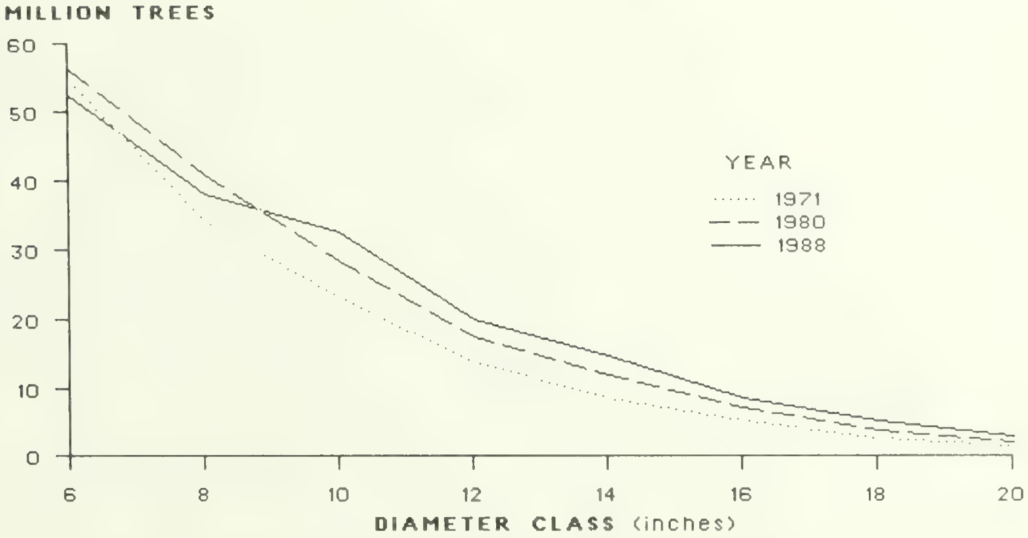

Figure 8.--Number of hardwood growing-stock trees on timberland by diameter class, West Tennessee, 1971, 1980, and 1988.

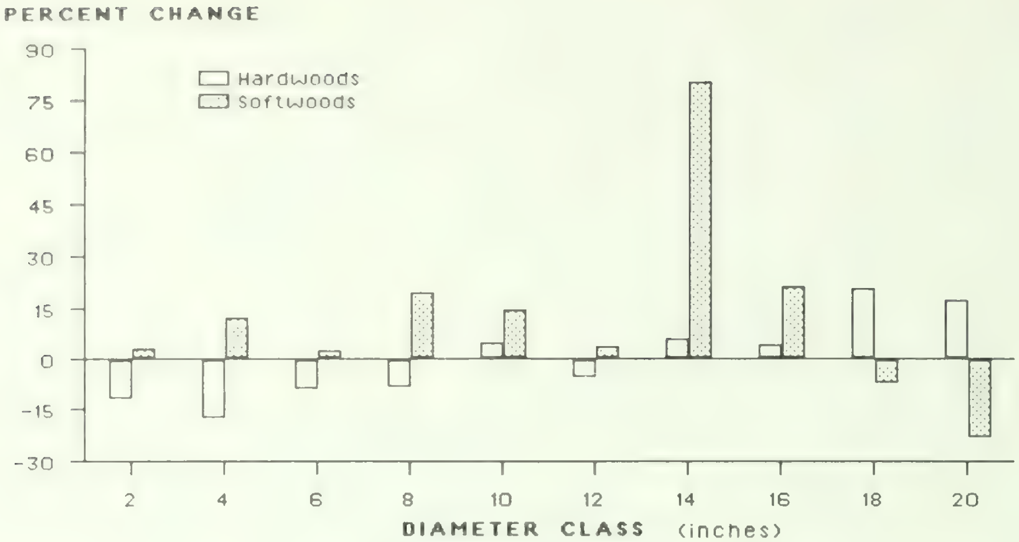

Figure 9.--Percent change in the number of live trees on timberland by species group and diameter class, West Tennessee, 1980 and 1988.

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Tabulates forest resource information from a new inventory of the West Unit of Tennessee.

Additional Keywords: Area, volume, forest type, stand size, ownership.

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Forest Statistics for East Tennessee Counties - 1989

Dennis M. May and John S. Vissage

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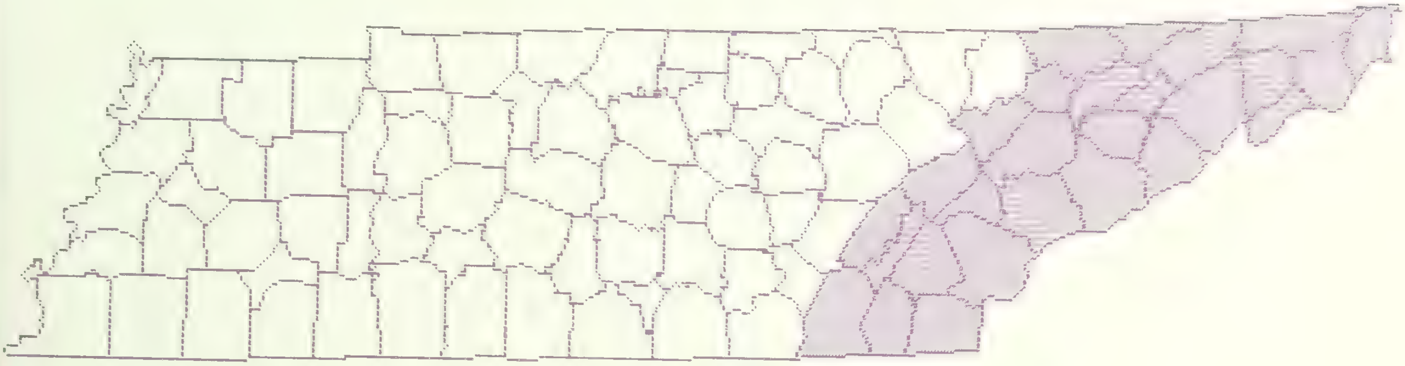

SUMMARY

The 1989 survey of the East Unit of Tennessee revealed the following:

- Timberland now covers 3,442.3 thousand acres, a drop of 1 percent since 1980.
- Public agencies control 21 percent of the unit's timberland.
- Timberland held by farmers fell 20 percent, while timberland held by individuals climbed 22 percent.
- Forest industry ownership of timberland fell 29 percent since 1980.
- Area in sawtimber-sized stands increased and now comprises 57 percent of all timberland.
- Hardwood types occupy 2 out of every 3 acres of timberland.
- The number of softwood growing-stock trees fell 14 percent, while the volume of softwood growing-stock climbed 9 percent to 1,413.0 million cubic feet.
- The number of hardwood growing-stock trees fell 35 percent, while the volume of hardwood growing-stock climbed 31 percent to 3,548.3 million cubic feet.
- Both softwood and hardwood grade 1 volumes have declined since 1980.
- Net growth increased for both growing stock and sawtimber, despite a general doubling in mortality.
- Removals increased for both growing stock and sawtimber, but growth still exceeds removals by approximately 3 to 1.

FOREWORD

The Southern Forest Survey, an activity of the Southern Forest Experiment Station Forest Inventory and Analysis work unit, covers the States of Alabama, Arkansas, Louisiana, Mississippi, Oklahoma, Tennessee, and Texas, and the island of Puerto Rico.

This survey is part of the nationwide Forest Survey originally authorized by the McSweeney-McNary Act of 1928. More recent legislation pertinent to the survey mission includes the Forest and Rangeland Renewable Resources Planning Act of 1974 and the Forest and Rangeland Renewable Resources Rsearch Act of 1978. The survey mission is to develop, analyze, and maintain renewable forest resource information. This information is essential for formulation of forest policies and programs.

April 1989

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*Core tables are presented in response to the Southern Industrial Forestry Research Council's recommendations. These tables are identical among Forest Inventory and Analysis units in the eastern United States.

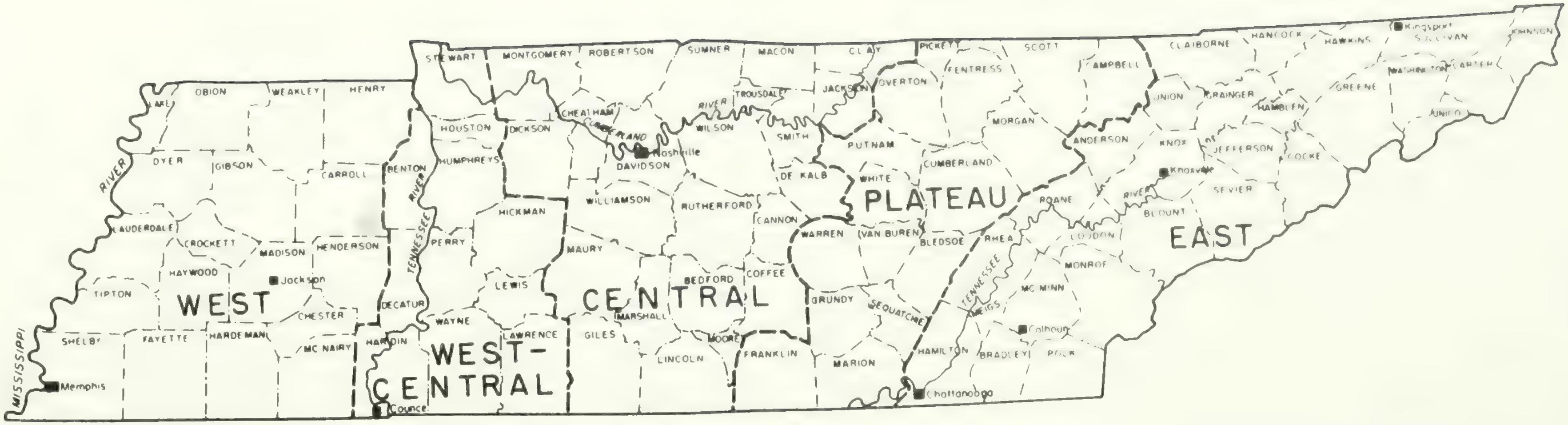

Figure I.-The forest survey regions of Tennessee.

Forest Statistics for East Tennessee Counties – 1989

Dennis M. May and John S. Vissage

INTRODUCTION

Tabulated results were derived from data obtained during a recent inventory of 27 counties comprising the East Unit of Tennessee (fig. I). Tables 1-25 were developed to provide compatibility among Forest Inventory and Analysis Projects. Tables 26-40 are supplementary tables and may change from unit to unit or State to State to address specific resource issues.

Data on forest acreage and timber volume were secured by a three-step process. A forest-nonforest classification using aerial photographs was accomplished for points representing approximately 230 acres. These photo classifications were adjusted based on ground observations at sample locations representing approximately 3,840 acres. Finally, field measurements were made at forest locations on the intersections of grid lines spaced 3 miles apart. At these forest locations, per-acre estimates were obtained from trees measured on ten 37.5 basal area factor prism points.

The sampling methods were designed to achieve suitable sampling errors for estimates of area and volume at the State level. Sampling error increases as the area or volume considered decreases. The sampling errors presented in table I, equal to one standard deviation for the sample data, may be used to construct confidence intervals for population estimates. For example, at the 95-percent confidence level, the confidence interval for growing-stock volume (in million cubic feet) in the East Unit of Tennessee (with a sampling error of 3.4 percent) is

$$4{,}961.3 \pm 1.96(0.034 \times 4{,}961.3) = 4{,}961.3 \pm 330.6$$

where 1.96 is the number of standard deviations. This confidence interval indicates a 95-percent degree of confidence that the range, 4,630.7 to 5,291.9 million cubic feet, will contain the true growing-stock inventory volume.

Sampling errors for sub-groups of counties in the unit may be estimated by the following formula:

$$SE_g = \frac{SE_t\sqrt{X_t}}{\sqrt{X_g}}$$

where:

SE = standard error of estimate (expressed as a percent)
X = variable of interest (area or volume)
g = group of counties to be combined
t = total for the Unit.

For example, the sampling error estimate of growing-stock volume for Carter, Johnson and Sullivan counties is 9.5 percent. Thus, the 95 percent confidence interval for growing-stock volume is 630.7 ± 117.4 million cubic feet.

Ownership information is obtained by the same systematic sample outlined above. County courthouse records are used to obtain ownership information for each forested plot. An expansion factor representing timberland area in that county is then applied to the ownership group the plot represents. Next, the ownership groups are totaled for each county. Thus, acreages reported at the county level are estimates and may not exactly match known totals for each ownership category within that county.

In order to achieve greater compatibility among Forest Inventory and Analysis Projects, a

Table I—*Sampling errors[1] for timberland, growing stock, and sawtimber, East Tennessee Counties, 1989*

		Growing stock			
County	Timberland	Volume	Growth	Removals	Sawtimber volume
	- - - - - - - -	- - - - - - - -	*Percent*	- - - - - - - -	- - - - - - - -
Anderson	5.1	14.4	17.2	48.4	18.6
Blount	2.7	12.3	38.4	...	15.3
Bradley	5.1	31.6	16.0	36.8	39.4
Carter	2.3	10.8	37.7	20.3	13.5
Claiborne	3.1	15.1	20.6	17.4	18.9
Cocke	2.8	12.2	24.2	36.1	15.1
Grainger	2.5	22.3	16.7	42.3	29.2
Greene	1.9	14.7	16.1	39.2	17.8
Hamblen	3.3	32.6	(2)	...	36.7
Hamilton	3.0	12.2	14.9	(2)	14.5
Hancock	4.0	36.0	41.1	(2)	40.4
Hawkins	2.1	16.1	25.4	...	19.2
Jefferson	1.7	26.9	29.9	...	28.6
Johnson	1.5	18.3	23.0	32.5	21.9
Knox	2.8	23.2	28.5	3.7	26.8
Loudon	4.5	27.1	21.6	32.2	31.7
McMinn	3.1	16.6	21.4	3.3	21.6
Meigs	2.0	16.2	19.5	...	20.1
Monroe	1.8	11.8	13.2	27.3	13.9
Polk	2.4	13.3	27.1	23.2	16.6
Rhea	2.3	14.2	17.9	44.0	18.1
Roane	1.9	9.8	18.0	24.0	13.5
Sevier	1.8	15.3	18.3	7.0	19.4
Sullivan	2.4	13.9	39.8	...	17.9
Unicoi	1.6	17.9	20.7	31.6	21.7
Union	3.0	19.3	31.4	...	23.2
Washington	1.4	20.0	22.5	(2)	24.5
All counties	0.5	3.4	5.5	15.6	4.1

[1] By random-sampling formula.
[2] Sampling error greater than 50.

new tree grading classification has been in effect since the 1988 Arkansas survey. Tree grade 5 is used for trees currently or prospectively capable of producing at least one 12-foot log or two 8-foot logs in the saw-log portion but not able to produce a 12-foot log in the butt 16 feet. These trees, formerly classed as rough or rotten, are now included in growing stock. Table II shows the impact of this change on volume and growth.

HIGHLIGHTS

Area

The East Unit of Tennessee encompasses the counties from the mountains forming the border with North Carolina westward down across the Great Valley to the highlands forming the western boundary of the Cumberland Plateau. Since the 1950's, when a major shift in the population base from agricultural/rural to more industrial/urban caused a major increase in forest land, forest land in the unit has remained relatively stable. Today, 3,745.6 thousand acres of the unit, 58 percent, are classified as forest land. Much of this acreage is concentrated in the more mountainous portions of the unit. Approximately 8 percent of this area is reserved from commercial timber production by written statute. Most of this reserved acreage is controlled by the National Park Service and U.S. Forest Service. The remaining 3,442.3 thousand acres are classified as timberland, a drop of only 1 percent since 1980.

Public agencies control over one-fifth of the timberland in the unit. Timberlands on the

Table II – *Changes in volume and growth estimates due to inclusion of tree grade 5 in growing-stock inventory, East Tennessee counties, 1989*

	Tree grade 5		
	Excluded from growing stock	Included in growing stock	Percent change
	Million cubic feet		
Softwood:			
Growing-stock volume	1384.1	1413.0	2.1
Rough and rotten volume	55.3	26.5	-52.1
Growing-stock growth	37.9	41.4	9.2
Hardwood:			
Growing-stock volume	3309.1	3548.3	7.2
Rough and rotten volume	600.0	360.9	-39.9
Growing-stock growth	107.0	136.6	27.7
	Million board feet		
Softwood:			
Sawtimber volume	4904.5	5008.1	2.1
Sawtimber growth	190.1	202.1	6.3
Hardwood:			
Sawtimber volume	11019.2	11866.2	7.7
Sawtimber growth	467.2	570.0	22.0

Cherokee National Forest account for three-quarters of the public ownership. As with the rest of the state, the majority of the timberland is in private ownership. Within this broad ownership category, there has been a significant shift in ownership patterns away from "farmers", which lost 238.6 thousand acres, to "individuals", which gained 241.4 thousand acres. This shift likely reflects both a reduction in the number of individuals earning a livelihood by farming and a reduction in the amount of timberland held by farmers as emphasis is placed on arable acres. Another significant change in the private category was the 29-percent reduction in forest industry holdings since 1980.

Even in this unit, which has historically had the highest proportion of softwood types in the State, hardwood types still account for two out of every three acres of timberland. Overall, the area in hardwood types remained relatively stable, while acreage shifted away from softwood types to mixed (oak-pine) types. Between 1980 and 1989, softwood types fell 15 percent, while mixed types climbed 8 percent. The vast majority of the decline in softwood types can be attributed to a loss in yellow pine types. The loss of softwood types and shift towards mixed types can be caused by several factors. Softwood removals since 1980 have been concentrated in yellow pine species. This preferential harvesting of pines can cause type changes in residual stands. Additionally, young pine stands are often typed as mixed or hardwood until pines capture the sites. Adding credence to this are the 20.6 thousand acres of 1 to 10 year old pine plantations in the unit, of which only one-quarter typed as softwoods. Finally, normal stand development can also account for the shifting away from softwood types as softwoods are replaced by generally more shade tolerant hardwood species. Adding support to this last factor is the general maturation of the unit's forest. Between 1980 and 1989, the number of acres in sawtimber-sized stands increased by 428.3 thousand acres, while acres in both sapling and pole-sized stands decreased. Today, sawtimber stands comprise 57 percent of all timberland, whereas in 1980 they only accounted for 44 percent.

Timber Inventory

Along with the general maturation of the unit's timberland has come an expected drop in numbers of trees and accumulation of volume in trees of larger size. Softwood growing-stock numbers fell 14 percent over the period with the decline concentrated in size classes smaller than 12 inches. This drop occurred across most softwoods, except for white pine which increased across all diameter classes. At the same time, softwood growing-stock volume increased 9 percent to 1,413.0 million cubic feet. The volume increase was concentrated in the 10-inch and larger size classes, but did not occur across all species. Shortleaf pine, pitch pine, and red cedar actually lost volume since 1980.

The hardwoods experienced similar trends with the number of growing-stock trees falling 35 percent over the period. This decline generally occurred across all species and was concentrated in the 6-inch and smaller size classes. Growing-stock volume increased 31 percent to 3,548.3 million cubic feet with the volume increment concentrated in the 8-inch and larger size classes. This volume increase generally occurred across all species. However, the 38-percent rise in yellow-poplar volume since 1980 made it the number one hardwood species in the unit in terms of total volume.

The general maturation of the unit's timberland is especially evident in the sawtimber portion of the inventory, which experienced increases in both numbers and volumes of trees since 1980. The softwood sawtimber inventory climbed 22 percent to 5,008.1 million board feet and the hardwoods increased 43 percent to 11,866.2 million board feet. As with growing-stock volume, the volume increases were generally across all species, with the exceptions of shortleaf and pitch pines which declined in volume since 1980.

In a unit where 70 percent of the sawtimber volume is in hardwood, the quality associated with the sawtimber volume is of special concern. Inspite of the increasing inventory in sawtimber-sized trees, grade 1 volume in both softwoods and hardwoods fell since 1980. Softwood grade 1 volume fell 21 percent with all of the decline associated with yellow pine and red cedar. For hardwoods, almost all species experienced some of the 28-percent reduction in grade 1 volume. Much of the loss in grade 1 volume was concentrated in the oaks and hickories. Yellow-poplar was the major exception to this general loss in grade 1 volume with a 21-percent gain over the period.

Growth, Removals, and Mortality

The increasing inventory of the unit is a consequence of a favorable growth-to-drain situation since 1980. On an average annual basis, net growth for the unit averaged 178.0 million cubic feet for growing stock and 772.1 million board feet for sawtimber. These figures are inflated due to the growing-stock definition change initiated since the 1980 survey. Using comparable net growth figures (Table II), net growth increased 10 percent for growing stock and 44 percent for sawtimber since 1980. The magnitude of the difference between the growing-stock and sawtimber net growth increases is due to a shifting in the size class distribution of the unit's forests. There are now fewer small trees and more large trees causing an influx of trees across the minimum sawtimber-size threshold resulting in a jump in sawtimber growth.

These overall increases in net growth are inspite of a general doubling in the amount of both growing-stock and sawtimber mortality. Much of the increase in mortality was concentrated in the yellow pines and oaks. Bark beetles were the main cause of yellow pine mortality and diseases caused most of the oak mortality.

Although not to the extent of mortality, removals also increased. On an average annual basis, growing-stock removals climbed 14 percent to 56.0 million cubic feet and sawtimber removals climbed 46 percent to 191.7 million board feet. Removals for both growing stock and sawtimber were about equally split between softwoods and hardwoods. Much of the rise in softwood removals can be attributed to increased yellow pine removals, especially shortleaf pine. White pine removals actually declined over the period. Yellow-poplar removals comprised a majority of the increase in hardwood removals. Even at these increased levels, growth still exceeds removals for both growing stock and sawtimber by approximately 3 to 1, which explains the increase in the inventory since 1980.

The unit's timberlands are generally in a desirable condition. The stable timberland base is supporting a maturing forest that's increasing in volume and growing at three times the rate of depletion. This desirable condition is marred only by a slip in sawtimber quality since 1980.

DEFINITION OF TERMS

Average net annual growth.—Average net annual volume increase for the inter-survey period.

Average annual mortality.—Average annual sound-wood volume of growing-stock trees dying from natural causes.

Average annual removal.—Average net annual volume of growing-stock trees removed from the inventory by harvesting, cultural operations (such as timber-stand improvement), land clearing, or changes in land use.

Commercial species.—Tree species which normally develop into trees suitable for industrial wood products.

Forest land.—Land at least 16.7 percent stocked by forest trees of any size, or formerly having such tree cover, and not currently developed for nonforest use.

Forest type.—A classification of forest land based upon the species forming a plurality of live-tree stocking.

Growing-stock trees.—Live trees of commercial species. Rough and rotten trees are excluded.

Growing-stock volume.—The cubic-foot volume of sound wood in growing-stock trees at least 5.0 inches in diameter at breast height, from a l-foot stump to a minimum 4.0-inch top diameter outside bark of the central stem, or to the point where the central stem breaks into limbs.

Live trees.—Commercial and noncommercial tree species of sapling size or larger.

Natural stands.—Stands with no evidence of artificial regeneration. This includes those established by seed tree regeneration methods.

Noncommercial species.—Tree species of typically small size, poor form, or inferior quality which normally do not develop into trees suitable for industrial wood products.

Planted stands.—Stands with some evidence of planting or direct seeding.

Poletimber trees.—Growing-stock trees at least 5.0 inches in diameter at breast height, but smaller than sawtimber size.

Reserved timberland.—Productive public forest land withdrawn from timber utilization through statute or administrative regulations.

Rotten trees.—Live trees of commercial species that do not contain at least one 12-foot log or two 8-foot logs in the saw-log portion, now or prospectively, primarily because of rot.

Rough trees.—Live trees of commercial species that do not contain at least one 12-foot log or two 8-foot logs in the saw-log portion, now or prospectively, primarily because of roughness or poor form. Also included are all live trees of noncommercial species.

Saplings.—Growing-stock trees at least 1.0 inches but less than 5.0 inches in diameter at breast height.

Sawtimber trees.—Live trees that contain at least one 12-foot log, or two 8-foot logs in the saw-log portion, and meet regional specifications for freedom from defect. Softwoods must be at least 9.0 inches in diameter at breast height and hardwoods at least 11.0 inches in diameter at breast height.

Sawtimber volume.—Sound-wood volume of the saw-log portion of growing-stock sawtimber trees in board feet, International 1/4-inch rule and in cubic feet.

Seedlings.—Growing-stock trees less than 1.0 inches in diameter at breast height and greater than one foot tall for hardwoods, greater than six inches tall for softwoods, and greater than one-half inch in diameter at ground level for longleaf pine.

Select red oaks—A classification of several red oak species composed of: cherrybark, Shumard, and northern red oaks.

Select white oaks.—A classification of several white oak species composed of: white, swamp chestnut, swamp white, chinkapin, Durand, and bur oaks.

Site class.—A classification of forest land in terms of inherent capacity to grow crops of industrial wood.

Stand-size class.—A classification of forest land based on the diameter size class of live trees on the sampled area; that is, sawtimber, poletimber, or sapling and seedling.

Timberland.—Forest land that is producing, or is capable of producing, crops of industrial wood and not withdrawn from timber utilization. Timberland is synonymous with "commercial forest land" in prior reports.

Tree grade.—A classification of the volume of the saw-log portion of sawtimber trees, based on: 1) the log grade of the butt log, or 2) ability to produce at least one 12-foot or two 8-foot logs in the upper-section of the saw-log portion.

Woodland.—Forest land incapable of yielding crops of industrial wood because of adverse site conditions.

CORE TABLES 1-25

Table 1–*Area by county and land class, East Tennessee, 1989*

County	All land[1]	Forest land				Nonforest land
		Total	Timberland[2]	Woodland[3]	Reserved timberland	
	Thousand acres					
Anderson	216.8	124.0	124.0	...	...	92.8
Blount	357.2	165.5	69.9	...	95.6	191.7
Bradley	209.5	92.5	92.5	...	...	117.0
Carter	218.0	161.3	155.5	...	5.8	56.6
Claiborne	276.8	167.5	167.5	...	...	109.2
Cocke	276.5	182.0	163.4	...	18.6	94.5
Grainger	174.7	102.6	102.6	...	...	72.1
Greene	395.8	179.9	171.8	...	8.1	215.9
Hamblen	100.1	32.8	32.8	...	...	67.3
Hamilton	345.0	210.7	210.7	...	...	134.3
Hancock	143.0	92.9	92.9	...	...	50.1
Hawkins	310.7	177.3	177.3	...	...	133.4
Jefferson	169.9	62.2	62.2	...	...	107.7
Johnson	190.2	144.4	144.4	...	...	45.8
Knox	323.8	127.5	127.0	...	0.5	196.2
Loudon	150.5	62.3	62.3	...	...	88.1
McMinn	274.5	136.5	136.5	...	...	138.0
Meigs	121.1	82.9	82.9	...	...	38.2
Monroe	414.9	301.5	279.0	...	22.5	113.3
Polk	280.0	224.7	214.1	...	10.5	55.3
Rhea	197.7	126.5	126.4	...	0.2	71.2
Roane	228.3	153.1	153.1	...	...	75.2
Sevier	377.8	254.5	127.5	...	127.1	123.3
Sullivan	265.8	123.6	123.6	...	...	142.1
Unicoi	119.3	99.3	89.4	...	9.9	20.0
Union	139.7	102.5	102.5	...	...	37.2
Washington	208.8	54.8	50.3	...	4.5	154.0
All counties	6486.4	3745.6	3442.3	...	303.3	2740.8

[1] From U.S. Bureau of the Census.

[2] Forest land (formerly termed commercial forest land) that is producing or capable of producing at least 20 cubic feet of industrial wood per acre per year. Includes areas which may be inaccessible or inoperable by current standards. Excludes reserved timberlands.

[3] Forest land incapable of producing 20 cubic feet of industrial wood per acre per year under natural conditions because of adverse site conditions.

Table 2–*Area of timberland by county and ownership class, East Tennessee, 1989*

County	All ownerships	National forest	Misc. federal	State	County and municipal	Forest industry[1]	Farmer	Corporate[2]	Individual[2]
	Thousand acres								
Anderson	124.0	...	6.5	...	...	...	26.1	71.8	19.6
Blount	69.9	...	...	...	...	9.1	27.4	3.0	30.4
Bradley	92.5	...	...	...	...	15.4	15.4	...	61.7
Carter	155.5	78.1	...	...	...	...	17.2	...	60.2
Claiborne	167.5	...	...	...	...	...	87.4	51.0	29.1
Cocke	163.4	44.3	...	...	...	5.7	56.7	...	56.7
Grainger	102.6	...	...	...	...	...	59.4	5.4	37.8
Greene	171.8	29.6	...	...	...	...	74.0	5.7	62.6
Hamblen	32.8	...	...	...	...	...	24.6	...	8.2
Hamilton	210.7	...	19.7	6.6	...	13.2	32.9	19.7	118.5
Hancock	92.9	...	...	...	...	...	81.3	...	11.6
Hawkins	177.3	...	5.7	...	5.7	5.7	85.8	5.7	68.6
Jefferson	62.2	...	...	...	...	...	33.9	11.3	17.0
Johnson	144.4	50.5	...	...	...	...	20.1	...	73.7
Knox	127.0	...	...	...	...	...	31.7	15.9	79.4
Loudon	62.3	...	11.3	...	...	5.7	34.0	...	11.3
McMinn	136.5	2.2	...	...	...	28.0	22.4	...	84.0
Meigs	82.9	...	...	5.9	...	11.8	23.7	...	41.5
Monroe	279.0	121.3	15.0	...	...	7.5	45.1	15.0	75.1
Polk	214.1	136.6	...	...	...	...	29.8	17.9	29.8
Rhea	126.4	...	5.5	...	5.5	44.0	27.5	...	44.0
Roane	153.1	...	26.4	5.3	...	...	21.1	10.6	89.7
Sevier	127.5	...	...	...	...	...	33.0	4.7	89.7
Sullivan	123.6	37.1	4.8	...	4.8	...	28.8	4.8	43.3
Unicoi	89.4	43.8	...	12.4	...	...	...	...	33.2
Union	102.5	...	10.8	16.2	...	...	27.0	...	48.6
Washington	50.3	12.4	...	...	...	...	14.2	...	23.7
All counties	3442.3	556.0	105.8	46.4	16.0	146.1	980.6	242.5	1348.9

[1] Includes land leased to forest industry.

[2] Indian land will be classed as corporate or individual as defined by the Bureau of Indian Affairs.

Table 3–*Area of timberland by county and forest type group, East Tennessee, 1989*

		Forest type group						
			Loblolly-shortleaf pine					
County	Total	White-red jack pine	Planted	Natural	Oak-pine	Oak-hickory	Oak-gum-cypress	Maple-beech birch
	Thousand acres							
Anderson	124.0	...	...	13.1	6.5	104.4	...	...
Blount	69.9	3.0	3.0	6.1	24.3	33.4	...	...
Bradley	92.5	...	...	30.8	15.4	46.3	...	...
Carter	155.5	...	...	8.6	17.2	129.7	...	...
Claiborne	167.5	...	...	7.3	21.9	138.4	...	...
Cocke	163.4	...	...	17.0	25.9	114.8	5.7	...
Grainger	102.6	...	...	...	16.2	86.4	...	...
Greene	171.8	...	...	28.4	21.3	122.1	...	...
Hamblen	32.8	...	...	8.2	8.2	16.4	...	...
Hamilton	210.7	...	6.6	32.9	39.5	125.1	6.6	...
Hancock	92.9	...	...	...	5.8	87.1	...	...
Hawkins	177.3	...	...	11.4	34.3	131.6	...	...
Jefferson	62.2	...	11.3	...	5.7	45.2	...	...
Johnson	144.4	...	...	...	26.8	117.5	...	...
Knox	127.0	...	...	15.9	31.7	79.4	...	...
Loudon	62.3	...	5.7	17.0	11.3	28.3	...	...
McMinn	136.5	...	22.4	44.8	16.8	46.9	5.6	...
Meigs	82.9	...	17.8	...	23.7	41.5	...	...
Monroe	279.0	7.1	...	77.9	76.8	113.6	...	3.6
Polk	214.1	12.8	...	82.7	47.8	66.5	...	4.3
Rhea	126.4	...	5.5	5.5	27.5	87.9	...	...
Roane	153.1	...	5.3	5.3	26.4	116.1	...	...
Sevier	127.5	...	...	14.2	51.9	61.4	...	...
Sullivan	123.6	7.4	...	4.8	20.8	90.7	...	...
Unicoi	89.4	6.3	...	...	20.8	62.4	...	...
Union	102.5	...	...	10.8	21.6	70.1	...	...
Washington	50.3	...	...	...	8.9	41.4	...	...
All counties	3442.3	36.7	77.5	442.7	655.0	2204.8	17.9	7.8

Table 4–*Area of timberland by county and stand-size class, East Tennessee, 1989*

County	All classes	Stand-size class		
		Sawtimber	Poletimber	Sapling-seedling
	Thousand acres			
Anderson	124.0	91.4	26.1	6.5
Blount	69.9	45.6	15.2	9.1
Bradley	92.5	61.7	...	30.8
Carter	155.5	111.3	44.2	...
Claiborne	167.5	94.7	43.7	29.1
Cocke	163.4	84.5	61.8	17.0
Grainger	102.6	70.2	27.0	5.4
Greene	171.8	100.8	44.1	27.0
Hamblen	32.8	24.6	8.2	...
Hamilton	210.7	125.1	52.7	32.9
Hancock	92.9	34.8	17.4	40.7
Hawkins	177.3	91.5	45.8	40.0
Jefferson	62.2	39.6	5.7	17.0
Johnson	144.4	67.2	50.4	26.8
Knox	127.0	63.5	31.7	31.7
Loudon	62.3	45.3	...	17.0
McMinn	136.5	61.6	56.0	18.9
Meigs	82.9	41.5	35.5	5.9
Monroe	279.0	154.0	73.2	51.8
Polk	214.1	113.5	35.0	65.7
Rhea	126.4	54.9	38.5	33.0
Roane	153.1	79.2	58.1	15.8
Sevier	127.5	70.8	42.5	14.2
Sullivan	123.6	62.9	47.4	13.3
Unicoi	89.4	60.3	25.0	4.1
Union	102.5	70.1	21.6	10.8
Washington	50.3	32.6	13.0	4.7
All counties	3442.3	1953.2	919.6	569.5

Table 5—*Area of timberland by county and site class, East Tennessee, 1989*

County	All classes	Site class (cubic feet/acre/year)				
		> 165	120-165	85-120	50-85	< 50
	Thousand acres					
Anderson	124.0	13.1	19.6	19.6	65.3	6.5
Blount	69.9	...	6.1	15.2	45.6	3.0
Bradley	92.5	...	15.4	15.4	61.7	...
Carter	155.5	...	17.8	52.8	49.4	35.6
Claiborne	167.5	...	21.9	51.0	43.7	51.0
Cocke	163.4	...	11.3	42.9	93.4	15.8
Grainger	102.6	16.2	32.4	10.8	27.0	16.2
Greene	171.8	5.7	15.6	44.1	35.4	71.0
Hamblen	32.8	...	...	16.4	16.4	...
Hamilton	210.7	...	19.7	65.8	105.3	19.7
Hancock	92.9	...	5.8	34.8	40.7	11.6
Hawkins	177.3	5.7	5.7	51.5	51.5	62.9
Jefferson	62.2	11.3	...	11.3	33.9	5.7
Johnson	144.4	...	3.4	10.1	97.3	33.6
Knox	127.0	23.8	31.7	23.8	47.6	...
Loudon	62.3	5.7	28.3	...	22.7	5.7
McMinn	136.5	16.8	16.8	18.9	72.8	11.2
Meigs	82.9	...	...	35.5	41.5	5.9
Monroe	279.0	44.3	51.8	84.7	65.0	33.2
Polk	214.1	4.3	29.0	77.7	82.7	20.5
Rhea	126.4	5.5	11.0	38.5	54.9	16.5
Roane	153.1	21.1	42.2	42.2	47.5	...
Sevier	127.5	14.2	9.4	18.9	47.2	37.8
Sullivan	123.6	...	9.6	8.5	87.4	18.1
Unicoi	89.4	6.3	29.1	8.3	45.8	...
Union	102.5	...	16.2	48.6	32.4	5.4
Washington	50.3	4.7	9.5	18.3	13.6	4.1
All counties	3442.3	198.6	459.5	865.6	1427.6	491.1

Table 6–*Area of timberland by county and stocking classes of growing-stock trees, East Tennessee, 1989*

County	All classes	Stocking class (percent)				
		> 130	100-130	60-100	16.7-60	< 16.7
	Thousand acres					
Anderson	124.0	...	13.1	97.9	13.1	...
Blount	69.9	...	9.1	57.8	3.0	...
Bradley	92.5	15.4	...	46.3	30.8	...
Carter	155.5	...	9.2	119.3	27.0	...
Claiborne	167.5	...	21.9	102.0	43.7	...
Cocke	163.4	...	31.5	120.5	11.3	...
Grainger	102.6	...	21.6	81.0	...	...
Greene	171.8	...	29.8	109.4	32.7	...
Hamblen	32.8	...	8.2	16.4	8.2	...
Hamilton	210.7	...	19.7	92.2	92.2	6.6
Hancock	92.9	5.8	11.6	23.2	52.3	...
Hawkins	177.3	...	5.7	120.1	51.5	...
Jefferson	62.2	...	28.3	33.9	...	...
Johnson	144.4	...	16.8	107.4	20.1	...
Knox	127.0	...	15.9	95.2	15.9	...
Loudon	62.3	...	17.0	22.7	22.7	...
McMinn	136.5	5.6	39.2	80.5	11.2	...
Meigs	82.9	5.9	29.6	47.4	...	...
Monroe	279.0	...	80.7	179.7	18.6	...
Polk	214.1	4.3	91.3	100.7	17.9	...
Rhea	126.4	...	33.0	65.9	27.5	...
Roane	153.1	...	21.1	116.1	15.8	...
Sevier	127.5	...	23.6	89.7	14.2	...
Sullivan	123.6	...	36.7	58.1	28.8	...
Unicoi	89.4	...	6.3	68.6	14.6	...
Union	102.5	5.4	10.8	80.9	5.4	...
Washington	50.3	...	17.7	27.8	4.7	...
All counties	3442.3	42.4	649.4	2160.9	583.1	6.6

Table 7–*Area of timberland by forest type and ownership class, East Tennessee, 1989*

Forest type[1]	All ownerships	National forest	Other public	Forest industry	Forest industry-leased	Other private
	Thousand acres					
White-red-jack pine	36.7	33.6	...	...	...	3.0
Loblolly-shortleaf pine	520.2	64.8	17.1	36.9	...	401.4
Softwood total	556.9	98.4	17.1	36.9	...	404.5
Oak-pine	655.0	116.7	28.7	22.8	5.7	481.1
Oak-hickory	2204.8	333.0	122.5	80.8	...	1668.6
Oak-gum-cypress	17.9	...	...	...	...	17.9
Maple-beech-birch	7.8	7.8	...	...	...	...
Hardwood total	2885.4	457.5	151.1	103.5	5.7	2167.5
All types	3442.3	556.0	168.3	140.4	5.7	2572.0

[1] Forest type is based on species plurality of all live trees. Mixed types that in combination contain a majority of hardwood stocking are hardwood types.

Table 8–*Area of timberland by ownership and stocking classes of growing-stock trees, East Tennessee, 1989*

Ownership class	All classes	Stocking class (percent) > 130	100-130	60-100	16.7-60	< 16.7
	Thousand acres					
National forest	556.0	4.3	168.8	343.7	39.2	...
Other public	168.3	...	40.0	94.6	33.7	...
Forest industry	140.4	11.5	5.5	89.5	33.9	...
Forest industry-leased	5.7	...	...	...	5.7	...
Other private	2572.0	26.6	435.0	1633.1	470.7	6.6
All ownerships	3442.3	42.4	649.4	2160.9	583.1	6.6

Table 9–*Area of timberland by forest type and stand-size class, East Tennessee, 1989*

Forest type[1]	All classes	Stand-size class Sawtimber	Poletimber	Sapling-seedling
	Thousand acres			
White-red-jack pine	36.7	29.4	7.3	...
Loblolly-shortleaf pine	520.2	273.6	152.2	94.4
Softwood total	556.9	303.0	159.5	94.4
Oak-pine	655.0	327.8	189.1	138.1
Oak-hickory	2204.8	1307.6	566.7	330.5
Oak-gum-cypress	17.9	11.3	...	6.6
Maple-beech-birch	7.8	3.6	4.3	...
Hardwood total	2885.4	1650.2	760.1	475.1
All types	3442.3	1953.2	919.6	569.5

[1] Forest type is based on species plurality of all live trees. Mixed types that in combination contain a majority of hardwood stocking are hardwood types.

Table 10–*Number of live trees on timberland by species and diameter class, East Tennessee, 1989*

Species	All classes	Diameter class (inches at breast height) 1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Shortleaf-loblolly pine	65532	16505	13304	8541	11267	8666	4526	1954	546	154	50	20	...
Other yellow pines	165252	56487	32120	26792	23328	13026	8097	3680	1347	285	68	22	...
Eastern white-red pine	51784	32019	9272	2870	2362	1459	1144	663	692	520	354	386	44
Eastern hemlock	39599	24027	8186	3103	1635	906	837	365	138	151	121	117	13
Other softwoods	101757	67258	20703	9226	2830	1106	427	190	17	...	...	...	...
Total softwoods	423923	196296	83585	50531	41420	25163	15032	6852	2740	1109	594	546	56
Select white oaks	61142	24509	13636	5049	5795	4006	2434	2002	1366	910	609	785	38
Select red oaks	24833	5849	3408	2904	3155	2555	1990	2166	791	573	607	740	94
Other white oaks	110544	33135	18352	16887	13451	9394	6711	4441	3235	1967	1228	1581	162
Other red oaks	66005	19690	8796	8849	7379	7668	4721	3667	2202	1267	957	753	56
Hickory	130952	65440	28616	13007	9698	6681	3382	1826	1203	488	337	268	7
Yellow birch	1056	668	327	...	...	...	...	38	...	...	...	22	2
Hard maple	91131	67414	13779	4984	1542	1485	713	573	242	156	102	121	19
Soft maple	259283	168841	53312	18198	9420	4303	2547	1251	537	284	287	276	27
Beech	22729	12277	4589	1664	1245	1334	296	438	296	215	104	242	29
Sweetgum	30472	19933	3972	2849	1582	1168	542	239	125	13	31	19	...
Tupelo-blackgum	140991	113923	15359	5649	2778	1326	765	553	255	167	113	104	...
Ash	39296	18727	11661	3224	2154	1379	976	400	312	213	161	90	...
Basswood	2588	1336	...	374	104	243	172	182	69	44	31	28	4
Yellow-poplar	73516	29523	12985	7678	6264	4497	3929	3164	2291	1469	953	727	37
Black walnut	3848	965	...	638	844	365	486	335	139	45	17	12	...
Other hardwoods	451868	325430	80554	24145	11625	5569	2415	862	435	361	203	227	43
Total hardwoods	1510254	907660	269345	116101	77036	51973	32078	22138	13500	8174	5741	5993	517
Noncommercial	243114	160013	58875	16164	5548	1500	591	302	104	13	...	6	...
All species	2177292	1263970	411804	182797	124004	78635	47701	29291	16343	9296	6334	6544	573

Table 11—*Number of growing-stock trees on timberland by species and diameter class, East Tennessee, 1989*

		Diameter class (inches at breast height)										
Species	All classes	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Shortleaf-loblolly pine	59634	13176	11190	8451	10953	8666	4473	1954	546	154	50	20	...
Other yellow pines	132322	35710	23955	24083	22789	12694	7872	3572	1297	268	68	12	...
Eastern white-red pine	49513	30015	9272	2707	2362	1428	1109	663	674	509	354	377	44
Eastern hemlock	32105	18247	6590	2995	1635	906	837	365	138	142	121	117	13
Other softwoods	82523	52219	18396	8022	2555	830	335	149	17	...	...	...	...
Total softwoods	356097	149367	69403	46258	40293	24525	14627	6703	2673	1073	594	526	56
Select white oaks	44736	13678	10456	4675	5023	3637	2159	1800	1274	828	526	646	34
Select red oaks	20593	3111	2708	2635	3054	2427	1926	2078	753	553	565	697	87
Other white oaks	84009	18233	12638	15288	12331	8770	6044	3888	2917	1683	1008	1115	92
Other red oaks	49487	9682	5274	8164	6953	7261	3990	3465	1964	1161	867	672	35
Hickory	96818	37893	24381	12131	8967	6391	3116	1701	1180	467	326	257	7
Yellow birch	353	...	327	...	...	...	...	12	...	...	...	12	2
Hard maple	53070	33853	11079	3812	1463	1213	644	478	215	114	102	92	7
Soft maple	158719	89920	37680	15708	8105	3448	1845	985	443	190	199	179	18
Beech	11162	5327	1596	1356	829	981	198	293	226	129	61	147	18
Sweetgum	22099	13327	2439	2685	1582	1118	542	239	125	13	18	11	...
Tupelo-blackgum	70060	50215	9854	4734	2544	1090	632	482	191	154	69	94	...
Ash	22167	6468	8383	2668	1783	1212	753	272	256	158	138	75	
Basswood	939	...	...	161	52	217	172	182	51	44	31	28	...
Yellow-poplar	64596	23029	11866	7038	5977	4450	3803	3060	2250	1440	953	697	30
Black walnut	1784	...	...	320	350	313	397	228	124	45	7	...	...
Other hardwoods	201740	133246	35653	16631	8707	4197	1713	655	313	280	159	160	28
Total hardwoods	902333	437983	174333	98006	67722	46726	27934	19819	12280	7260	5031	4881	358
All species	1258430	587350	243736	144264	108015	71251	42561	26522	14953	8333	5625	5407	414

Table 12–*Volume of growing stock on timberland by species and diameter class, East Tennessee, 1989*

		Diameter class (inches at breast height)									
Species	All classes	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet										
Shortleaf-loblolly pine	397.8	25.0	74.4	117.7	89.8	55.2	20.9	8.8	3.1	2.9	..
Other yellow pines	705.9	76.6	163.6	162.3	150.1	93.2	43.9	11.4	3.6	1.3	...
Eastern white-red pine	179.2	5.5	12.6	14.9	17.6	15.8	24.2	24.4	21.0	35.9	7.3
Eastern hemlock	83.1	6.8	9.2	10.2	14.6	9.7	4.7	7.0	7.4	11.4	2.0
Other softwoods	46.9	19.5	12.6	7.9	3.9	2.4	0.5	...	...	...	...
Total softwoods	1413.0	133.4	272.4	313.0	276.1	176.3	94.3	51.6	35.0	51.5	9.3
Select white oaks	324.6	11.6	31.9	41.0	40.8	44.0	43.1	35.2	26.9	45.8	4.3
Select red oaks	284.4	6.9	19.9	26.7	34.5	51.1	24.6	24.6	31.2	53.0	11.8
Other white oaks	663.1	38.0	70.4	89.0	99.7	86.8	85.4	65.0	47.4	71.6	9.8
Other red oaks	491.5	22.3	41.3	76.4	64.8	85.4	58.3	48.6	43.7	46.3	4.4
Hickory	371.4	28.8	50.7	72.0	60.6	46.4	45.7	23.6	19.7	23.0	0.9
Yellow birch	1.6	...	...	...	...	0.3	...	...	...	1.2	0.2
Hard maple	82.3	10.0	9.1	13.1	11.5	12.7	7.4	4.6	5.0	7.8	1.1
Soft maple	233.3	44.7	50.5	40.4	31.9	23.5	14.0	7.6	8.8	11.4	0.7
Beech	59.7	3.2	4.6	11.5	3.2	6.3	8.0	5.3	2.9	12.7	1.9
Sweetgum	51.0	5.7	8.1	12.5	10.6	7.1	4.6	0.5	1.1	0.8	...
Tupelo-blackgum	76.2	10.0	13.4	10.3	10.4	10.8	5.3	6.1	3.8	6.0	...
Ash	72.1	6.1	9.8	11.7	12.0	6.2	7.9	6.4	6.9	5.2	...
Basswood	20.7	0.7	0.2	2.8	3.2	5.7	1.9	2.2	2.1	2.0	...
Yellow-poplar	567.8	19.2	40.0	54.8	79.4	88.1	84.2	72.1	63.1	62.8	4.2
Black walnut	21.5	0.6	2.2	3.5	5.1	4.2	4.3	1.5	0.2	...	...
Other hardwoods	227.1	42.0	50.1	43.7	30.9	15.3	10.2	10.3	8.4	12.4	3.8
Total hardwoods	3548.3	249.8	402.1	509.2	498.6	493.8	404.8	313.7	271.3	361.8	43.2
All species	4961.3	383.2	674.6	822.2	774.7	670.1	499.1	365.3	306.3	413.2	52.5

Table 13—*Volume of growing stock in the saw-log portion of sawtimber*[1] *trees on timberland by species and diameter class, East Tennessee, 1989*

Species	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet								
Shortleaf-loblolly pine	258.1	96.2	79.5	50.3	19.0	7.8	2.8	2.5	...
Other yellow pines	394.5	130.8	129.5	82.4	38.0	10.0	3.0	1.0	...
Eastern white-red pine	144.6	11.7	15.3	13.9	22.6	22.5	19.6	32.6	6.4
Eastern hemlock	59.2	7.9	12.5	8.7	4.4	6.6	6.7	10.4	2.0
Other softwoods	12.4	6.3	3.5	2.1	0.5	...	...	...	...
Total softwoods	868.8	253.0	240.2	157.3	84.5	46.8	32.1	46.6	8.5
Select white oaks	195.5	...	29.8	35.3	35.8	29.5	22.8	38.6	3.7
Select red oaks	191.2	...	25.4	42.2	20.6	21.7	26.5	44.5	10.4
Other white oaks	378.2	...	74.4	70.1	70.9	55.2	39.5	59.8	8.2
Other red oaks	292.8	...	48.3	71.8	50.0	41.0	37.5	40.2	3.9
Hickory	180.0	...	45.7	37.6	38.4	19.9	17.9	19.9	0.7
Yellow birch	1.4	...	...	0.2	...	...	...	1.0	0.2
Hard maple	40.1	...	8.3	10.6	6.2	3.8	4.1	6.3	0.9
Soft maple	77.7	...	23.3	18.2	11.5	6.2	7.8	10.2	0.6
Beech	33.6	...	2.4	5.3	6.7	4.4	2.5	10.8	1.6
Sweetgum	20.0	...	7.9	6.1	4.1	0.3	0.9	0.7	...
Tupelo-blackgum	36.7	...	8.0	9.0	4.9	5.6	3.5	5.7	...
Ash	36.5	...	8.6	5.2	6.8	5.7	5.9	4.4	...
Basswood	13.8	...	2.2	4.6	1.6	1.9	1.8	1.6	...
Yellow-poplar	384.3	...	57.4	72.6	73.7	63.8	56.5	56.5	3.7
Black walnut	11.7	...	3.7	3.4	3.4	1.1	0.1	...	...
Other hardwoods	74.2	...	22.6	12.1	8.7	8.8	7.5	11.0	3.5
Total hardwoods	1967.8	...	367.9	404.3	343.2	269.0	234.8	311.3	37.2
All species	2836.6	253.0	608.1	561.6	427.7	315.8	266.9	357.8	45.7

[1] That part of the bole of sawtimber trees between a 1-foot stump and saw-log top.

Table 14–*Volume of sawtimber on timberland by species and diameter class, East Tennessee, 1989*

Species	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Shortleaf-loblolly pine	1509.7	533.3	466.9	301.6	120.1	50.4	18.4	19.0	...
Other yellow pines	2260.3	707.1	741.3	487.9	233.0	62.9	20.9	7.3	...
Eastern white-red pine	843.4	59.9	82.4	78.2	128.6	134.2	117.9	203.3	38.9
Eastern hemlock	331.9	41.0	67.0	48.9	24.4	38.4	38.2	62.8	11.3
Other softwoods	62.8	31.7	17.6	10.9	2.6	...	...	...	...
Total softwoods	5008.1	1372.9	1375.3	927.4	508.7	285.8	195.3	292.4	50.3
Select white oaks	1170.7	...	166.1	199.7	217.1	178.4	142.1	245.7	21.6
Select red oaks	1151.8	...	142.4	244.9	121.7	133.2	166.1	277.0	66.5
Other white oaks	2281.9	...	416.4	401.7	425.8	344.1	248.1	388.9	57.0
Other red oaks	1722.9	...	257.2	415.3	292.7	251.2	227.6	254.1	24.7
Hickory	1115.6	...	263.2	225.0	242.8	129.6	117.1	133.5	4.4
Yellow birch	9.7	...	...	1.1	...	...	...	7.3	1.3
Hard maple	253.3	...	47.9	66.1	38.9	24.2	27.2	42.2	6.7
Soft maple	454.4	...	132.3	105.8	68.8	39.3	45.8	60.9	1.6
Beech	214.1	...	13.4	31.5	41.0	28.3	15.8	74.1	10.0
Sweetgum	116.6	...	45.8	35.9	23.9	1.8	5.4	3.7	...
Tupelo-blackgum	219.8	...	44.5	51.6	29.8	35.8	23.2	34.9	...
Ash	212.5	...	47.9	30.3	39.0	34.7	33.9	26.7	...
Basswood	86.7	...	12.8	29.7	10.0	12.9	11.5	9.8	...
Yellow-poplar	2360.3	...	333.6	432.0	443.9	394.5	363.6	369.6	22.9
Black walnut	67.1	...	19.3	19.1	21.0	7.1	0.6	...	...
Other hardwoods	428.7	...	127.9	69.3	49.9	51.1	45.1	65.6	19.8
Total hardwoods	11866.2	...	2070.6	2359.2	2066.4	1666.1	1473.2	1994.2	236.5
All species	16874.3	1372.9	3446.0	3286.6	2575.1	1951.9	1668.5	2286.6	286.7

Table 15–*Volume of growing stock and sawtimber on timberland by county and species group, East Tennessee, 1989*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Anderson	199.3	...	24.4	15.0	56.2	103.6	791.5	...	112.4	50.6	207.2	421.4
Blount	111.0	6.8	34.6	0.4	14.6	54.7	365.2	23.9	126.9	...	33.1	181.3
Bradley	113.9	...	51.3	0.9	13.1	48.5	422.9	...	184.5	3.5	28.2	206.7
Carter	277.6	...	28.3	13.7	87.1	148.5	959.1	...	107.8	56.3	340.2	454.7
Claiborne	196.3	...	9.1	2.4	53.2	131.6	653.3	...	37.1	2.0	181.2	433.0
Cocke	238.0	...	41.7	5.9	70.9	119.6	791.3	...	151.4	21.7	195.8	422.4
Grainger	156.2	...	15.2	3.1	50.6	87.4	522.3	...	47.2	6.6	184.4	284.0
Greene	246.8	...	35.9	5.7	68.2	136.9	856.0	...	119.6	9.0	262.4	465.0
Hamblen	70.4	...	18.4	2.7	9.1	40.1	276.5	...	75.7	2.7	27.6	170.6
Hamilton	248.8	14.0	77.2	0.9	22.0	134.8	890.5	63.2	297.9	2.5	52.7	474.2
Hancock	65.3	...	1.5	2.2	15.8	45.9	213.2	...	9.7	1.2	43.0	159.2
Hawkins	191.9	...	26.4	1.4	37.0	127.1	607.9	...	76.4	...	132.7	398.7
Jefferson	98.3	12.0	1.4	2.1	14.4	68.4	368.7	43.0	4.4	4.4	42.3	274.7
Johnson	193.1	0.4	22.1	7.8	51.3	111.6	608.2	...	91.5	27.6	141.9	347.2
Knox	169.6	...	35.8	3.9	50.0	79.9	628.8	...	105.5	7.2	206.2	310.0
Loudon	97.6	17.1	23.6	2.6	7.2	47.0	378.9	68.8	81.0	5.3	16.8	207.0
McMinn	215.0	32.6	74.1	1.2	37.1	69.9	670.0	79.5	227.8	...	137.8	224.8
Meigs	126.6	42.1	11.6	1.7	23.2	47.9	367.4	126.0	34.4	5.6	41.1	160.3
Monroe	477.4	2.4	185.0	14.1	88.9	187.0	1537.2	6.3	646.8	39.9	263.3	580.9
Polk	326.1	...	190.0	7.9	40.4	87.8	1193.8	...	743.1	24.1	114.3	312.2
Rhea	180.1	15.5	25.8	2.8	46.1	90.0	510.4	33.1	65.5	10.3	137.7	263.8
Roane	228.7	14.8	31.3	...	57.9	124.7	733.5	73.4	121.8	...	191.5	346.9
Sevier	183.5	...	63.0	6.1	29.2	85.2	623.9	...	224.5	22.8	76.0	300.5
Sullivan	160.0	...	31.6	1.6	30.4	96.4	488.7	...	120.8	1.3	92.0	274.6
Unicoi	170.2	...	35.4	11.1	53.9	69.8	619.0	...	176.0	47.0	174.4	221.6
Union	123.2	...	17.6	5.6	43.8	56.2	420.9	...	55.1	7.2	152.1	206.5
Washington	96.5	2.7	10.5	7.2	23.0	53.1	375.3	3.3	48.2	35.8	78.1	209.9
All counties	4961.3	160.2	1122.7	130.0	1094.7	2453.6	16874.3	520.4	4093.0	394.7	3554.1	8312.1

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 16–*Volume of timber on timberland by class of timber and species group, East Tennessee, 1989*

Class of timber	All species	Softwood			Hardwood	
		Pine		Other	Soft[1]	Hard[2]
		Planted	Natural			
	Million cubic feet					
Sawtimber trees:						
Saw-log portion	2836.6	90.2	707.0	71.6	587.0	1380.8
Upper-stem portion	557.6	15.7	112.3	10.2	115.4	304.0
Total	3394.2	105.9	819.3	81.9	702.3	1684.8
Poletimber trees:	1567.0	54.3	303.4	48.1	392.3	768.8
All growing-stock trees	4961.3	160.2	1122.7	130.0	1094.7	2453.6
Rough trees:						
Sawtimber size	153.6	...	9.6	3.2	30.6	110.2
Poletimber size	168.8	1.2	9.0	2.2	36.6	119.7
Total	322.4	1.2	18.6	5.5	67.2	229.9
Rotten trees:						
Sawtimber size	55.6	...	0.6	0.4	12.7	42.0
Poletimber size	9.3	...	...	0.2	3.3	5.8
Total	65.0	...	0.6	0.6	16.0	47.8
Salvable dead trees:						
Sawtimber size	15.0	...	9.6	...	0.3	5.1
Poletimber size	13.8	0.6	1.8	0.8	2.6	8.0
Total	28.9	0.6	11.5	0.8	2.9	13.1
All classes	5377.5	162.0	1153.4	136.9	1180.7	2744.4

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 17–*Volume of live trees and growing stock on timberland by ownership class and species group, East Tennessee, 1989*

Ownership class	Live trees						Growing stock					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet											
National forest	1077.4	2.4	272.4	30.7	249.3	522.7	1005.0	2.4	270.1	30.5	234.9	467.1
Other public	252.2	26.5	26.1	5.0	54.4	140.2	237.0	26.5	25.4	4.8	49.5	130.8
Forest industry	170.9	28.0	35.6	1.7	27.5	78.1	159.8	28.0	35.0	1.7	26.4	68.8
Forest industry-leased	1.9	...	0.6	0.3	0.2	0.8	1.6	...	0.6	0.2	..	0.8
Other private	3846.2	104.5	807.2	98.4	846.4	1989.6	3557.8	103.3	791.6	92.9	783.8	1786.1
All ownerships	5348.6	161.5	1141.9	136.1	1177.8	2731.4	4961.3	160.2	1122.7	130.0	1094.7	2453.6

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 18–*Average net annual growth of growing stock and sawtimber on timberland by county and species group, East Tennessee, 1989*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						Million board feet					
Anderson	8.2	...	...	0.4	4.1	3.7	40.2	...	...	2.1	17.1	20.9
Blount	2.0	0.4	-0.3	...	0.6	1.3	3.9	1.3	-1.5	...	1.8	2.3
Bradley	5.3	...	2.8	-0.3	0.8	2.1	25.4	...	13.1	-0.4	3.0	9.7
Carter	7.1	...	0.1	-0.4	4.1	3.3	33.6	...	3.4	-4.0	17.8	16.4
Claiborne	8.4	...	-0.1	0.2	3.1	5.2	32.2	...	0.6	...	12.8	18.8
Cocke	6.0	...	0.7	0.3	3.4	1.6	27.1	...	3.5	0.7	12.7	10.1
Grainger	8.5	...	0.6	0.2	2.6	5.0	37.4	...	1.8	1.1	12.3	22.3
Greene	12.2	...	1.7	-0.2	5.1	5.6	48.4	...	5.8	1.2	19.9	21.5
Hamblen	3.4	...	-0.4	...	0.6	3.2	16.8	...	0.6	...	3.1	13.0
Hamilton	9.1	0.8	2.1	0.1	1.0	5.0	34.9	3.3	12.6	0.3	0.7	18.0
Hancock	3.5	...	...	...	0.9	2.5	15.4	...	0.2	...	5.3	9.8
Hawkins	3.7	...	0.3	0.2	0.9	2.4	17.3	...	0.1	...	4.1	13.1
Jefferson	6.4	...	0.6	...	1.2	4.6	25.2	...	5.2	0.2	3.4	16.4
Johnson	10.1	...	0.8	0.7	2.0	6.5	42.7	...	3.1	2.6	9.8	27.1
Knox	5.9	...	0.9	0.1	1.6	3.3	22.4	...	1.3	0.8	9.9	10.4
Loudon	4.9	0.8	1.6	0.2	0.4	2.0	24.4	5.9	6.5	0.6	0.2	11.2
McMinn	9.5	1.5	3.3	...	1.9	2.7	36.8	5.0	14.8	...	8.3	8.7
Meigs	5.3	1.8	...	...	1.3	2.2	26.6	11.3	-0.3	0.2	4.6	10.8
Monroe	17.0	...	6.8	0.6	2.8	6.7	67.6	...	31.2	2.4	10.0	24.0
Polk	6.1	0.3	4.1	0.1	1.2	0.4	37.1	0.9	18.1	0.2	7.0	10.9
Rhea	9.2	0.8	1.5	...	2.3	4.5	32.4	3.2	3.2	0.5	7.9	17.6
Roane	6.9	...	1.7	...	2.4	2.9	28.8	1.2	7.9	...	8.2	11.5
Sevier	4.8	...	0.7	0.3	1.9	1.9	22.9	...	8.9	1.6	4.3	8.1
Sullivan	2.6	...	0.6	0.1	0.7	1.3	14.2	...	2.7	...	1.5	10.1
Unicoi	6.5	...	1.7	0.1	2.1	2.6	30.2	...	12.7	0.4	7.0	10.1
Union	3.2	...	-0.3	0.1	1.5	1.8	13.5	...	-0.2	1.0	4.6	8.1
Washington	2.2	...	0.3	0.1	0.9	0.8	14.5	...	2.0	1.0	3.7	7.9
All counties	178.0	6.4	32.0	3.0	51.6	85.1	772.1	32.1	157.4	12.6	201.1	368.9

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 19–*Average net annual removals of growing stock and sawtimber on timberland by county and species group, East Tennessee, 1989*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Anderson	2.5	...	0.2	0.1	0.9	1.3	5.7	...	0.9	...	2.5	2.3
Blount	1.8	...	0.9	...	0.2	0.7	9.2	...	4.6	...	1.2	3.4
Bradley	8.0	...	6.3	...	0.5	1.1	17.6	...	15.1	...	0.5	2.1
Carter	3.6	...	0.1	...	0.9	2.7	12.7	...	...	...	2.1	10.6
Claiborne	2.5	...	0.5	...	1.3	0.7	11.3	...	1.6	...	6.3	3.5
Cocke	3.2	...	1.7	0.1	0.5	0.9	16.2	...	10.0	...	2.3	3.9
Grainger	0.3	...	...	0.1	...	0.2	1.8	...	...	0.4	...	1.4
Greene	1.9	...	...	...	0.9	1.0	10.2	...	...	...	6.1	4.1
Hamblen	...	...	...	...	...	...	...	...	...	...	...	...
Hamilton	2.2	1.5	0.4	...	...	0.3	5.9	4.4	1.1	...	...	0.4
Hancock	2.5	...	...	...	2.1	0.4	12.9	...	...	...	12.9	...
Hawkins	0.4	...	...	...	0.4	...	2.1	...	...	...	2.1	...
Jefferson	0.6	...	...	0.4	0.2	...	1.8	...	...	1.0	0.8	...
Johnson	0.4	...	...	...	0.2	0.2	1.9	...	...	...	0.6	1.2
Knox	2.1	...	0.8	...	...	1.3	8.2	...	2.4	...	...	5.8
Loudon	1.1	...	0.2	0.2	0.1	0.6	3.5	...	0.7	0.4	0.3	2.2
McMinn	1.8	0.9	0.9	...	...	...	5.3	2.1	3.2	...	...	...
Meigs	0.2	...	...	...	...	0.2	...	...	...	...	...	...
Monroe	8.0	1.5	3.5	0.6	0.1	2.5	25.3	4.3	11.6	2.4	...	7.0
Polk	6.1	2.2	3.2	...	0.3	0.4	20.8	3.5	15.8	...	0.8	0.7
Rhea	1.7	...	0.2	...	0.2	1.3	4.7	...	0.8	...	0.5	3.3
Roane	1.5	0.3	1.2	...	...	...	4.7	0.6	4.1	...	...	...
Sevier	0.2	...	0.1	...	...	0.1	0.8	...	0.4	...	...	0.4
Sullivan	0.1	...	...	...	...	0.1	0.3	...	...	...	...	0.3
Unicoi	3.1	...	0.1	0.1	0.9	2.0	8.3	...	...	0.3	3.4	4.6
Union	0.1	...	...	...	0.1	...	...	...	...	...	...	...
Washington	0.2	...	...	...	...	0.2	0.5	...	...	...	...	0.5
All counties	56.0	6.4	20.1	1.5	9.6	18.4	191.7	14.8	72.4	4.6	42.3	57.5

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 20–*Average net annual growth and average annual removals of growing stock on timberland by species, East Tennessee, 1989*

Species	Growth	Removals
	Million cubic feet	
Yellow pines	32.0	25.3
Eastern white-red pines	6.4	1.3
Other softwoods	3.0	1.5
Total softwoods	41.4	28.0
Select white-red oaks	20.0	3.9
Other white-red oaks	40.9	7.8
Hickory	13.0	2.8
Yellow birch	0.1	1.0
Hard maple	4.7	...
Sweetgum	2.6	...
Ash-walnut-black cherry	3.8	0.4
Yellow-poplar	26.7	6.6
Other hardwoods	24.9	5.6
Total hardwoods	136.6	28.0
All species	178.0	56.0

Table 21–*Average net annual growth and average annual removals of sawtimber on timberland by species, East Tennessee, 1989*

Species	Growth	Removals
	Million board feet	
Yellow pines	156.0	80.7
Eastern white-red pines	33.5	6.5
Other softwoods	12.6	4.6
Total softwoods	202.1	91.8
Select white-red oaks	97.3	14.1
Other white-red oaks	178.5	25.6
Hickory	47.4	10.1
Yellow birch	0.3	5.0
Hard maple	15.0	...
Sweetgum	8.1	...
Ash-walnut-black cherry	11.9	0.9
Yellow-poplar	130.8	35.3
Other hardwoods	80.8	8.8
Total hardwoods	570.0	99.9
All species	772.1	191.7

Table 22–*Average annual mortality of growing stock and sawtimber on timberland by species, East Tennessee, 1989*

Species	Growing stock	Sawtimber
	Million cubic feet	*Million board feet*
Yellow pines	16.3	44.2
Eastern white-red pines	0.6	2.3
Other softwoods	1.9	4.1
Total softwoods	18.8	50.6
Select white-red oaks	3.7	9.8
Other white-red oaks	11.1	26.1
Hickory	2.6	8.2
Hard maple	0.3	...
Sweetgum	0.2	0.6
Ash-walnut-black cherry	0.8	1.1
Yellow-poplar	0.8	...
Other hardwoods	5.2	4.1
Total hardwoods	24.6	49.8
All species	43.5	100.4

Table 23–*Average net annual growth and average annual removals of growing stock on timberland by ownership class and species group, East Tennessee, 1989*

	Growth						Removals					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet											
National forest	24.4	...	5.3	0.3	8.1	10.7	15.4	...	5.1	0.6	2.6	7.2
Other public	8.0	0.3	0.7	...	1.5	5.6	0.5	0.3	0.3	...	...	...
Forest industry	8.3	2.8	0.9	0.1	1.1	3.4	2.5	0.9	0.2	...	0.4	1.0
Other private	137.2	3.3	25.1	2.5	40.9	65.4	37.6	5.2	14.6	0.9	6.6	10.3
All ownerships	178.0	6.4	32.0	3.0	51.6	85.1	56.0	6.4	20.1	1.5	9.6	18.4

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 24–*Average net annual growth and average annual removals of sawtimber on timberland by ownership class and species group, East Tennessee, 1989*

	Growth						Removals					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million board feet											
National forest	120.4	...	32.1	1.0	32.6	54.6	55.8	...	20.6	2.8	10.2	22.3
Other public	38.0	3.1	5.2	0.6	3.5	25.7	1.6	0.6	1.0	...	...	...
Forest industry	26.9	9.5	1.6	0.3	5.0	10.5	6.3	2.1	0.8	...	1.0	2.5
Other private	586.7	19.5	118.4	10.6	160.0	278.1	128.0	12.1	50.1	1.8	31.2	32.7
All ownerships	772.1	32.1	157.4	12.6	201.1	368.9	191.7	14.8	72.4	4.6	42.3	57.5

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 25–*Volume of sawtimber on timberland by species and tree grade, East Tennessee, 1989*

Species	All grades	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
	Million board feet					
Yellow pines	3770.1	286.1	429.2	2997.0	...	57.7
Redcedar	62.8	59.5	...	...	...	3.3
Other softwoods	1175.3	126.6	290.7	702.9	12.4	42.6
Total softwoods	5008.1	472.1	719.9	3700.0	12.4	103.7
Select white-red oaks	2322.6	302.2	519.7	859.8	502.0	138.8
Other white-red oaks	4004.8	400.9	762.2	1744.6	811.4	285.8
Hickory	1115.6	101.9	185.1	525.9	209.0	93.6
Yellow birch	9.7	...	...	5.9	3.8	...
Hard maple	253.3	26.2	32.1	115.7	68.4	10.9
Sweetgum	116.6	2.8	29.5	64.4	12.4	7.6
Tupelo and blackgum	219.8	34.4	28.2	70.8	52.3	34.1
Ash-walnut-black cherry	296.3	26.0	67.4	135.2	35.4	32.3
Yellow-poplar	2360.3	453.1	515.7	901.1	399.6	90.6
Other hardwoods	1167.3	72.0	154.4	448.9	338.5	153.3
Total hardwoods	11866.2	1419.5	2294.3	4872.5	2432.9	847.0
All species	16874.3	1891.6	3014.2	8572.4	2445.4	950.6

Supplemental Tables 26-40

Table 26–*Area of timberland by stand age, forest type group and type of regeneration, East Tennessee, 1989*

Stand age class	Pine		Oak-pine		Other hardwood types	
	Artificial	Natural	Artificial	Natural	Artificial	Natural
	Thousand acres					
1-10	5.6	...	9.5	14.7	5.5	20.8
11-20	11.5	24.7	5.5	10.7	6.7	6.6
21-30	5.5	...	4.7	...	...	4.1
31-40	28.4	5.6	...	...	5.9	...
41-50	3.0	...	5.9	...	...	...
>50	...	3.6	...	...	...	...
Mixed	23.5	445.5	5.3	598.6	...	2180.8
Total	77.5	479.4	30.9	624.0	18.1	2212.3

Table 27–*Volume of softwood growing stock on timberland by forest type, East Tennessee, 1989*

County	Total	Forest type group					
		White-red-jack pine	Loblolly-shortleaf pine		Oak-pine	Oak-hickory	Maple-beech-birch
			Planted	Natural			
	Million cubic feet						
Anderson	39.4	...	...	16.9	8.9	13.6	...
Blount	41.7	6.1	6.8	7.7	15.7	5.4	...
Bradley	52.2	...	...	48.2	...	4.0	...
Carter	42.0	...	...	4.1	20.1	17.8	...
Claiborne	11.5	...	...	2.2	5.9	3.4	...
Cocke	47.6	...	...	19.2	14.5	13.9	...
Grainger	18.2	...	...	...	8.4	9.8	...
Greene	41.6	...	...	20.3	14.1	7.2	...
Hamblen	21.1	...	...	17.1	3.6	0.5	...
Hamilton	92.0	...	14.0	29.5	31.0	17.5	...
Hancock	3.6	...	...	...	2.2	1.5	...
Hawkins	27.8	...	...	9.4	13.9	4.5	...
Jefferson	15.5	...	12.9	...	0.8	1.8	...
Johnson	30.2	...	...	...	13.7	16.5	...
Knox	39.7	...	...	10.3	21.9	7.5	...
Loudon	43.3	...	17.1	19.1	7.0	...	...
McMinn	107.9	...	32.6	58.7	11.3	5.4	...
Meigs	55.5	...	32.0	...	15.2	8.2	...
Monroe	201.5	11.1	...	105.4	53.7	31.2	0.1
Polk	197.9	34.0	...	117.6	34.2	10.4	1.7
Rhea	44.1	...	11.4	2.2	26.0	4.6	...
Roane	46.1	...	8.3	11.8	16.6	9.2	...
Sevier	69.1	...	...	14.4	45.8	8.9	...
Sullivan	33.2	13.2	...	5.7	9.6	4.7	...
Unicoi	46.5	13.1	...	...	18.8	14.6	...
Union	23.2	...	...	2.0	17.3	4.0	...
Washington	20.3	...	...	...	8.6	11.7	...
All counties	1413.0	77.5	135.2	521.7	439.0	237.8	1.8

Table 28–*Volume of hardwood growing stock on timberland by forest type, East Tennessee, 1989*

		Forest type group						
			Loblolly-shortleaf pine					
County	Total	White-red-jack pine	Planted	Natural	Oak-pine	Oak-hickory	Oak-gum-cypress	Maple-beech-birch
	Million cubic feet							
Anderson	159.8	...	...	4.2	5.0	150.7	...	...
Blount	69.2	3.0	0.5	0.8	15.4	49.6	...	...
Bradley	61.7	...	...	8.2	0.3	53.1	...	...
Carter	235.6	...	...	1.0	12.7	221.9	...	...
Claiborne	184.8	...	...	0.6	6.5	177.6	...	...
Cocke	190.4	...	...	6.2	18.0	158.0	8.2	...
Grainger	138.0	...	...	...	10.2	127.8	...	...
Greene	205.2	...	...	8.6	16.3	180.3	...	...
Hamblen	49.2	...	...	2.6	7.6	39.0	...	...
Hamilton	156.8	...	5.0	5.6	17.0	128.7	0.5	...
Hancock	61.6	...	...	...	2.1	59.5	...	...
Hawkins	164.1	...	...	...	17.6	146.5	...	...
Jefferson	82.7	...	7.3	...	2.0	73.4	...	...
Johnson	162.9	...	...	...	21.9	141.0	...	...
Knox	129.9	...	...	1.2	17.2	111.5	...	...
Loudon	54.2	...	...	2.3	7.4	44.6	...	...
McMinn	107.1	...	7.2	15.2	9.8	67.1	7.7	...
Meigs	71.1	...	3.7	...	17.3	50.1	...	...
Monroe	275.9	1.5	...	23.2	47.1	195.7	...	8.3
Polk	128.2	12.8	...	28.0	26.3	57.9	...	3.2
Rhea	136.0	...	0.4	...	19.4	116.3	...	...
Roane	182.7	...	...	3.3	18.1	161.3	...	...
Sevier	114.4	...	...	3.4	35.0	76.1	...	...
Sullivan	126.8	5.0	...	0.6	14.7	106.6	...	...
Unicoi	123.7	3.1	...	...	15.4	105.3	...	...
Union	100.0	...	...	2.2	15.5	82.3	...	...
Washington	76.1	...	...	...	6.7	69.5	...	...
All counties	3548.3	25.3	24.0	117.2	402.5	2951.3	16.4	11.5

Table 29–*Volume of softwood growing stock in the saw-log portion of sawtimber trees on timberland by forest type, East Tennessee, 1989*

		Forest type group					
			Loblolly-shortleaf pine				
County	Total	White-red-jack pine	Planted	Natural	Oak-pine	Oak-hickory	Maple-beech-birch
	Million cubic feet						
Anderson	28.4	...	...	11.7	7.2	9.5	...
Blount	26.9	5.0	4.2	4.5	9.7	3.5	...
Bradley	34.1	...	...	30.6	...	3.5	...
Carter	29.6	...	...	1.1	14.9	13.6	...
Claiborne	6.4	...	...	0.4	3.4	2.7	...
Cocke	31.2	...	...	12.0	10.1	9.1	...
Grainger	10.0	...	...	...	3.6	6.3	...
Greene	22.7	...	...	9.0	9.3	4.5	...
Hamblen	12.6	...	...	11.0	1.6	...	...
Hamilton	64.6	...	11.1	18.7	21.3	13.4	...
Hancock	1.7	...	...	...	0.2	1.5	...
Hawkins	13.9	...	...	2.7	8.6	2.6	...
Jefferson	9.2	...	8.1	...	0.3	0.8	...
Johnson	22.7	..	...	...	10.5	12.2	...
Knox	20.0	...	...	4.6	10.7	4.7	...
Loudon	25.6	...	11.4	9.2	4.9	...	...
McMinn	51.8	...	13.3	25.3	9.6	3.6	...
Meigs	29.5	...	13.9	...	9.6	6.0	...
Monroe	118.4	7.7	...	56.7	30.9	23.1	...
Polk	126.5	27.3	...	67.7	22.7	7.3	1.4
Rhea	19.2	...	3.3	0.8	12.3	2.8	...
Roane	33.4	...	7.3	7.9	12.2	6.1	...
Sevier	43.2	...	...	7.7	29.3	6.3	...
Sullivan	22.5	10.6	...	3.8	5.8	2.3	...
Unicoi	36.6	12.2	...	...	13.7	10.7	...
Union	12.6	...	...	0.7	9.6	2.4	...
Washington	15.5	...	...	...	5.4	10.0	...
All counties	868.8	62.8	72.6	286.0	277.6	168.5	1.4

Table 30–*Volume of hardwood growing stock in the saw-log portion of sawtimber trees on timberland by forest type, East Tennessee, 1989*

County	Total	Forest type group						
		White-red-jack pine	Loblolly-shortleaf pine		Oak-pine	Oak-hickory	Oak-gum-cypress	Maple-beech-birch
			Planted	Natural				
	Million cubic feet							
Anderson	101.6	...	...	1.4	3.6	96.5	...	...
Blount	37.5	1.7	0.2	...	7.2	28.5	...	...
Bradley	39.7	...	...	2.4	0.3	36.9	...	...
Carter	131.5	...	...	0.3	4.2	126.9	...	...
Claiborne	99.7	...	...	0.5	1.1	98.2	...	...
Cocke	104.6	...	...	2.9	6.8	90.2	4.7	...
Grainger	76.9	...	...	...	4.8	72.1	...	...
Greene	116.8	...	...	4.2	4.4	108.2	...	...
Hamblen	31.1	...	...	0.5	6.5	24.1	...	...
Hamilton	88.1	...	2.2	2.1	7.3	76.5	...	...
Hancock	32.6	...	...	...	...	32.6	...	...
Hawkins	87.4	...	...	...	5.3	82.1	...	...
Jefferson	49.1	...	3.5	...	0.8	44.8	...	...
Johnson	84.8	...	...	...	13.1	71.7	...	...
Knox	81.5	...	...	1.0	9.3	71.2	...	...
Loudon	36.6	...	...	0.8	4.2	31.6	...	...
McMinn	60.5	...	2.7	4.1	6.4	42.6	4.6	...
Meigs	35.1	...	1.2	...	9.6	24.3	...	...
Monroe	138.6	0.5	...	6.2	22.3	105.6	...	4.1
Polk	70.2	7.5	...	14.3	16.2	31.8	...	0.4
Rhea	67.3	...	...	...	8.2	59.1	...	...
Roane	91.4	...	...	2.0	9.2	80.2	...	...
Sevier	62.7	...	...	0.4	17.8	44.4	...	...
Sullivan	65.8	1.5	...	0.4	4.9	58.9	...	...
Unicoi	64.5	0.3	...	...	7.7	56.5	...	...
Union	64.1	...	...	1.0	8.4	54.7	...	...
Washington	48.3	...	...	...	4.2	44.0	...	...
All counties	1967.8	11.6	9.8	44.6	193.8	1694.2	9.3	4.5

Table 31–*Volume of timber on timberland by county, class of timber and species group, East Tennessee, 1989*

County	All classes	Growing stock		Rough		Rotten	
		Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
	Million cubic feet						
Anderson	219.5	39.4	159.8	1.6	11.7	...	7.0
Blount	115.7	41.7	69.2	0.3	4.2	...	0.2
Bradley	116.6	52.2	61.7	...	2.7	...	...
Carter	310.7	42.0	235.6	0.9	25.8	...	6.3
Claiborne	216.2	11.5	184.8	0.3	15.8	0.4	3.5
Cocke	252.0	47.6	190.4	1.1	11.9	...	1.0
Grainger	171.2	18.2	138.0	0.2	13.0	...	1.8
Greene	270.0	41.6	205.2	1.6	18.4	...	3.1
Hamblen	76.0	21.1	49.2	...	5.4	...	0.2
Hamilton	273.3	92.0	156.8	0.2	19.3	0.2	4.8
Hancock	75.7	3.6	61.6	0.2	9.9	...	0.3
Hawkins	208.1	27.8	164.1	0.9	14.4	...	1.0
Jefferson	106.1	15.5	82.7	...	7.0	...	0.9
Johnson	208.9	30.2	162.9	...	13.2	...	2.6
Knox	192.0	39.7	129.9	2.5	16.3	...	3.6
Loudon	103.7	43.3	54.2	1.6	3.7	0.2	0.6
McMinn	227.3	107.9	107.1	1.2	9.1	0.3	1.7
Meigs	132.6	55.5	71.1	...	5.7	...	0.3
Monroe	511.9	201.5	275.9	5.6	21.5	...	7.5
Polk	339.9	197.9	128.2	1.5	9.5	0.1	2.8
Rhea	193.2	44.1	136.0	0.7	11.1	...	1.2
Roane	247.1	46.1	182.7	...	15.7	...	2.6
Sevier	196.1	69.1	114.4	2.1	6.1	...	4.3
Sullivan	170.2	33.2	126.8	0.4	8.4	...	1.4
Unicoi	186.3	46.5	123.7	1.3	10.4	...	4.3
Union	126.8	23.2	100.0	0.7	2.9	...	...
Washington	101.4	20.3	76.1	0.4	4.0	...	0.6
All counties	5348.6	1413.0	3548.3	25.3	297.1	1.2	63.8

Table 32–*Number of live trees on timberland by detailed species and diameter class, East Tennessee, 1989*

		Diameter class (inches at breast height)											
Species	All classes	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Shortleaf pine	40381	10249	7482	5007	6867	5533	3268	1395	423	114	25	20	...
Loblolly pine	25151	6257	5822	3534	4399	3134	1257	559	123	40	25	...	...
Virginia pine	151599	53540	30614	23392	20695	11504	7236	3291	1034	260	26	7	...
Pitch pine	10418	2620	654	2795	1896	1100	616	377	286	25	33	15	...
Other s. pines	3234	327	852	604	737	422	246	11	26	...	9	...	...
E. white pine	51784	32019	9272	2870	2362	1459	1144	663	692	520	354	386	44
Redcedar	101757	67258	20703	9226	2830	1106	427	190	17	...	...	...	...
Hemlock-spruce	39599	24027	8186	3103	1635	906	837	365	138	151	121	117	13
Total softwoods	423923	196296	83585	50531	41420	25163	15032	6852	2740	1109	594	546	56
Select white oaks	61142	24509	13636	5049	5795	4006	2434	2002	1366	910	609	785	38
Select red oaks	24833	5849	3408	2904	3155	2555	1990	2166	791	573	607	740	94
Other white oaks	110544	33135	18352	16887	13451	9394	6711	4441	3235	1967	1228	1581	162
Other red oaks	66005	19690	8796	8849	7379	7668	4721	3667	2202	1267	957	753	56
Other hickories	130952	65440	28616	13007	9698	6681	3382	1826	1203	488	337	268	7
Persimmon	9189	4527	2600	1490	497	45	28	...	...	...	...	...	...
Hard maple	91131	67414	13779	4984	1542	1485	713	573	242	156	102	121	19
Soft maple	257393	167802	52798	18064	9420	4224	2431	1251	537	284	287	276	19
Boxelder	1890	1040	513	133	...	79	116	...	...	...	...	...	8
Beech	22729	12277	4589	1664	1245	1334	296	438	296	215	104	242	29
Sweetgum	30472	19933	3972	2849	1582	1168	542	239	125	13	31	19	...
Blackgum	140126	113057	15359	5649	2778	1326	765	553	255	167	113	104	...
Other gums/tupelos	866	866	...	...	...	...	...	...	...	...	...	...	...
White ash	31091	13714	9838	2743	1806	1174	748	400	269	177	143	81	...
Other ashes	8205	5013	1823	481	348	205	228	...	43	36	18	9	...
Sycamore	1261	...	...	491	237	157	133	65	79	21	23	45	10
Basswood	2588	1336	...	374	104	243	172	182	69	44	31	28	4
Yellow-poplar	73516	29523	12985	7678	6264	4497	3929	3164	2291	1469	953	727	37
Magnolia	6887	1641	2039	1324	806	600	334	56	40	24	23	...	...
Willow	211	...	...	120	71	...	...	20	...	...	...	...	...
Black walnut	3848	965	...	638	844	365	486	335	139	45	17	12	...
Black cherry	41075	27550	8397	2666	1440	671	200	36	42	41	24	8	...
American elm	12980	7291	2989	1128	583	505	242	159	10	44	11	16	3
Other elms	34928	24868	5016	2873	1167	432	332	116	16	63	16	25	4
River birch	19	...	...	...	...	19	...	...	...	...	...	...	...
Other birches	19057	8129	4721	2973	2090	686	286	92	10	10	17	36	7
Hackberry	7941	4474	2148	569	412	166	49	40	14	38	...	24	8
Black locust	16109	6346	5027	1473	1188	1257	407	134	134	62	48	34	...
Other locusts	323	...	...	59	43	136	25	23	21	16	...	...	...
Sassafras	45224	26832	12417	3627	1715	470	76	75	...	12	...	...	...
Dogwood	246252	207561	34114	4138	438	...	...	...	...	...	...	...	...
Holly	939	911	...	...	...	...	...	...	16	11	...	...	...
Other commercial	10530	5968	1412	1215	937	426	302	84	53	19	42	60	13
Total hardwoods	1510254	907660	269345	116101	77036	51973	32078	22138	13500	8174	5741	5993	517
Noncommercial	243114	160013	58875	16164	5548	1500	591	302	104	13	...	6	...
All species	2177292	1263970	411804	182797	124004	78635	47701	29291	16343	9296	6334	6544	573

Table 33—*Number of growing-stock trees on timberland by detailed species and diameter class, East Tennessee, 1989*

		Diameter class (inches at breast height)									
Species	All classes	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees										
Shortleaf pine	22278	4916	6613	5533	3239	1395	423	114	25	20	...
Loblolly pine	12990	3534	4340	3134	1234	559	123	40	25	...	...
Virginia pine	64141	21149	20314	11204	7011	3184	1002	243	26	7	...
Pitch pine	6461	2330	1737	1068	616	377	270	25	33	5	...
Other s. pines	2055	604	737	422	246	11	26	...	9	...	...
E. white pine	10226	2707	2362	1428	1109	663	674	509	354	377	44
Redcedar	11908	8022	2555	830	335	149	17	...	...	...	...
Hemlock-spruce	7269	2995	1635	906	837	365	138	142	121	117	13
Total softwoods	137327	46258	40293	24525	14627	6703	2673	1073	594	526	56
Select white oaks	20602	4675	5023	3637	2159	1800	1274	828	526	646	34
Select red oaks	14775	2635	3054	2427	1926	2078	753	553	565	697	87
Other white oaks	53138	15288	12331	8770	6044	3888	2917	1683	1008	1115	92
Other red oaks	34532	8164	6953	7261	3990	3465	1964	1161	867	672	35
Other hickories	34543	12131	8967	6391	3116	1701	1180	467	326	257	7
Persimmon	1781	1210	497	45	28	...	...	...	...	...	...
Hard maple	8138	3812	1463	1213	644	478	215	114	102	92	7
Soft maple	30939	15574	8105	3448	1806	985	443	190	199	179	10
Boxelder	181	133	...	...	39	...	...	...	...	...	8
Beech	4239	1356	829	981	198	293	226	129	61	147	18
Sweetgum	6332	2685	1582	1118	542	239	125	13	18	11	...
Blackgum	9991	4734	2544	1090	632	482	191	154	69	94	...
White ash	6021	2187	1435	1007	584	272	213	129	119	75	...
Other ashes	1294	481	348	205	169	...	43	29	18	...	...
Sycamore	1077	312	237	157	133	65	79	21	23	39	10
Basswood	939	161	52	217	172	182	51	44	31	28	...
Yellow-poplar	29700	7038	5977	4450	3803	3060	2250	1440	953	697	30
Magnolia	2812	1055	806	491	334	56	40	24	6	...	...
Willow	140	120	...	...	...	20	...	...	...	...	...
Black walnut	1784	320	350	313	397	228	124	45	7	...	...
Black cherry	4095	2345	1133	445	74	36	12	41	9	...	...
American elm	1913	769	404	447	114	114	10	25	11	16	3
Other elms	4160	2390	880	393	279	102	16	63	16	18	4
River birch	19	...	...	19	...	...	...	...	...	...	...
Other birches	5443	2620	1832	598	261	67	10	10	17	21	7
Hackberry	735	296	219	118	...	40	14	38	...	9	...
Black locust	3371	1093	950	774	246	103	112	27	40	24	...
Other locusts	113	...	...	87	25	...	...	...	...	...	...
Sassafras	4041	2588	1073	308	60	...	...	12	...	...	...
Dogwood	1204	1144	60	...	...	...	...	...	...	...	...
Holly	11	...	...	...	...	...	...	11	...	...	...
Other commercial	1952	689	614	314	158	64	19	7	35	45	7
Total hardwoods	290017	98006	67722	46726	27934	19819	12280	7260	5031	4881	358
All species	427344	144264	108015	71251	42561	26522	14953	8333	5625	5407	414

Table 34–*Volume of growing-stock trees on timberland by detailed species and diameter class, East Tennessee, 1989*

Species	All classes	Diameter class (inches at breast height) 5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet										
Shortleaf pine	273.4	16.7	47.9	76.9	64.6	39.8	16.2	6.8	1.4	2.9	...
Loblolly pine	124.4	8.3	26.5	40.8	25.2	15.4	4.6	1.9	1.6	...	...
Virginia pine	634.2	69.3	149.2	147.5	136.8	84.1	34.6	10.5	1.5	0.7	...
Pitch pine	57.0	5.5	10.2	10.9	9.6	8.8	8.6	0.9	1.8	0.5	...
Other s. pines	14.8	1.8	4.2	3.8	3.7	0.3	0.8	...	0.3	...	...
E. white pine	179.2	5.5	12.6	14.9	17.6	15.8	24.2	24.4	21.0	35.9	7.3
Redcedar	46.9	19.5	12.6	7.9	3.9	2.4	0.5	...	...	...	...
Hemlock-spruce	83.1	6.8	9.2	10.2	14.6	9.7	4.7	7.0	7.4	11.4	2.0
Total softwoods	1413.0	133.4	272.4	313.0	276.1	176.3	94.3	51.6	35.0	51.5	9.3
Select white oaks	324.6	11.6	31.9	41.0	40.8	44.0	43.1	35.2	26.9	45.8	4.3
Select red oaks	284.4	6.9	19.9	26.7	34.5	51.1	24.6	24.6	31.2	53.0	11.8
Other white oaks	663.1	38.0	70.4	89.0	99.7	86.8	85.4	65.0	47.4	71.6	9.8
Other red oaks	491.5	22.3	41.3	76.4	64.8	85.4	58.3	48.6	43.7	46.3	4.4
Other hickories	371.4	28.8	50.7	72.0	60.6	46.4	45.7	23.6	19.7	23.0	0.9
Persimmon	5.5	2.9	2.2	0.3	0.2	...	...	...	...	...	...
Hard maple	82.3	10.0	9.1	13.1	11.5	12.7	7.4	4.6	5.0	7.8	1.1
Soft maple	232.3	44.4	50.5	40.4	31.5	23.5	14.0	7.6	8.8	11.4	0.3
Boxelder	1.0	0.2	...	...	0.4	...	...	...	...	...	0.4
Beech	59.7	3.2	4.6	11.5	3.2	6.3	8.0	5.3	2.9	12.7	1.9
Sweetgum	51.0	5.7	8.1	12.5	10.6	7.1	4.6	0.5	1.1	0.8	...
Blackgum	76.2	10.0	13.4	10.3	10.4	10.8	5.3	6.1	3.8	6.0	...
White ash	62.0	4.8	8.0	9.9	9.5	6.2	6.9	5.4	6.2	5.2	...
Other ashes	10.1	1.3	1.8	1.8	2.5	...	1.0	1.1	0.7	...	...
Sycamore	17.2	0.8	1.5	1.8	2.4	1.5	2.4	0.7	1.4	3.1	1.4
Basswood	20.7	0.7	0.2	2.8	3.2	5.7	1.9	2.2	2.1	2.0	...
Yellow-poplar	567.8	19.2	40.0	54.8	79.4	88.1	84.2	72.1	63.1	62.8	4.2
Magnolia	27.3	2.4	5.9	6.8	7.2	1.6	1.7	1.4	0.3	...	...
Willow	0.7	0.4	...	...	...	0.4	...	...	...	...	...
Black walnut	21.5	0.6	2.2	3.5	5.1	4.2	4.3	1.5	0.2	...	...
Black cherry	19.4	5.0	6.1	4.2	1.4	0.9	0.3	1.2	0.3	...	...
American elm	16.1	2.2	2.3	3.5	2.0	3.0	0.3	1.0	0.5	0.8	0.6
Other elms	26.2	5.7	4.8	3.4	4.6	2.4	0.4	2.2	1.1	1.1	0.5
River birch	0.1	...	...	0.1	...	...	...	...	...	...	...
Other birches	39.5	8.9	12.4	7.7	5.3	1.4	0.2	0.3	1.2	1.6	0.7
Hackberry	6.0	0.5	1.0	1.0	...	1.2	0.5	1.3	...	0.4	...
Black locust	31.0	2.7	5.3	8.2	4.1	2.0	3.7	0.8	2.3	1.9	...
Other locusts	1.0	...	...	0.7	0.4	...	...	...	...	...	...
Sassafras	16.4	7.2	5.2	2.6	0.9	...	...	0.5	...	...	...
Dogwood	1.9	1.7	0.2	...	...	...	...	...	...	...	...
Holly	0.4	...	...	...	...	...	...	0.4	...	...	...
Other commercial	20.0	1.6	3.4	3.2	2.5	1.2	0.6	0.6	1.4	4.7	0.9
Total hardwoods	3548.3	249.8	402.1	509.2	498.6	493.8	404.8	313.7	271.3	361.8	43.2
All species	4961.3	383.2	674.6	822.2	774.7	670.1	499.1	365.3	306.3	413.2	52.5

Table 35–*Volume of growing stock in the saw-log portion of sawtimber trees on timberland by detailed species and diameter class, East Tennessee, 1989*

Species	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet								
Shortleaf pine	181.4	63.3	57.6	36.1	14.7	5.9	1.3	2.5	...
Loblolly pine	76.7	33.0	21.8	14.2	4.3	1.9	1.6	...	...
Virginia pine	352.6	119.0	118.1	74.6	30.1	9.1	1.2	0.5	...
Pitch pine	34.0	8.5	8.0	7.5	7.2	0.8	1.4	0.5	...
Other s. pines	7.9	3.3	3.4	0.2	0.7	...	0.3	...	...
E. white pine	144.6	11.7	15.3	13.9	22.6	22.5	19.6	32.6	6.4
Redcedar	12.4	6.3	3.5	2.1	0.5	...	...	...	...
Hemlock-spruce	59.2	7.9	12.5	8.7	4.4	6.6	6.7	10.4	2.0
Total softwoods	868.8	253.0	240.2	157.3	84.5	46.8	32.1	46.6	8.5
Select white oaks	195.5	...	29.8	35.3	35.8	29.5	22.8	38.6	3.7
Select red oaks	191.2	...	25.4	42.2	20.6	21.7	26.5	44.5	10.4
Other white oaks	378.2	...	74.4	70.1	70.9	55.2	39.5	59.8	8.2
Other red oaks	292.8	...	48.3	71.8	50.0	41.0	37.5	40.2	3.9
Other hickories	180.0	...	45.7	37.6	38.4	19.9	17.9	19.9	0.7
Persimmon	0.2	...	0.2	...	...	...	...	...	...
Hard maple	40.1	...	8.3	10.6	6.2	3.8	4.1	6.3	0.9
Soft maple	77.1	...	23.0	18.2	11.5	6.2	7.8	10.2	0.3
Boxelder	0.6	...	0.2	...	...	...	...	...	0.4
Beech	33.6	...	2.4	5.3	6.7	4.4	2.5	10.8	1.6
Sweetgum	20.0	...	7.9	6.1	4.1	0.3	0.9	0.7	...
Blackgum	36.7	...	8.0	9.0	4.9	5.6	3.5	5.7	...
White ash	32.1	...	6.7	5.2	5.9	4.7	5.2	4.4	...
Other ashes	4.4	...	1.9	...	0.9	1.0	0.6	...	...
Sycamore	10.9	...	1.6	1.3	2.0	0.6	1.3	2.8	1.4
Basswood	13.8	...	2.2	4.6	1.6	1.9	1.8	1.6	...
Yellow-poplar	384.3	...	57.4	72.6	73.7	63.8	56.5	56.5	3.7
Magnolia	9.8	...	5.4	1.3	1.5	1.3	0.3	...	...
Willow	0.2	...	...	0.2	...	...	...	...	...
Black walnut	11.7	...	3.7	3.4	3.4	1.1	0.1	...	...
Black cherry	3.1	...	0.9	0.7	0.2	1.0	0.3	...	...
American elm	6.3	...	1.4	2.5	0.3	0.9	0.4	0.5	0.4
Other elms	10.3	...	3.7	2.0	0.4	1.9	0.9	1.0	0.4
Other birches	8.3	...	3.7	1.2	0.2	0.2	1.1	1.3	0.6
Hackberry	2.8	...	...	1.0	0.4	1.1	...	0.3	...
Black locust	12.1	...	3.0	1.4	3.1	0.7	2.1	1.8	...
Other locusts	0.3	...	0.3	...	...	...	...	...	...
Sassafras	1.1	...	0.7	...	...	0.3	...	...	...
Holly	0.4	...	...	...	...	0.4	...	...	...
Other commercial	9.6	...	1.7	0.8	0.6	0.4	1.1	4.2	0.8
Total hardwoods	1967.8	...	367.9	404.3	343.2	269.0	234.8	311.3	37.2
All species	2836.6	253.0	608.1	561.6	427.7	315.8	266.9	357.8	45.7

Table 36–*Volume of timber on timberland by species and class of timber, East Tennessee, 1989*

Species	All live	Growing stock	Rough	Rotten
	Million cubic feet			
Shortleaf pine	275.1	273.4	1.7	...
Loblolly pine	125.1	124.4	0.6	...
Virginia pine	648.5	634.2	13.7	0.6
Pitch pine	59.0	57.0	2.1	...
Other s. pines	14.8	14.8	...	...
E. white pine	180.9	179.2	1.7	...
Redcedar	52.5	46.9	5.0	0.6
Hemlock-spruce	83.6	83.1	0.4	...
Total softwoods	1439.5	1413.0	25.3	1.2
Select white oaks	347.7	324.6	18.6	4.6
Select red oaks	292.3	284.4	4.6	3.3
Other white oaks	722.7	663.1	43.7	16.0
Other red oaks	522.3	491.5	21.4	9.4
Other hickories	384.9	371.4	12.3	1.3
Persimmon	5.8	5.5	0.3	...
Hard maple	89.5	82.3	5.8	1.4
Soft maple	268.0	232.3	27.7	8.0
Boxelder	2.3	1.0	1.3	...
Beech	76.7	59.7	11.7	5.3
Sweetgum	52.5	51.0	1.2	0.3
Blackgum	83.9	76.2	5.2	2.6
White ash	72.9	62.0	10.7	0.2
Other ashes	11.0	10.1	0.8	...
Sycamore	17.4	17.2	0.3	...
Basswood	21.4	20.7	0.6	0.1
Yellow-poplar	576.9	567.8	8.0	1.2
Magnolia	29.2	27.3	1.7	0.3
Willow	1.0	0.7	0.3	...
Black walnut	27.1	21.5	4.4	1.1
Black cherry	25.0	19.4	5.2	0.4
American elm	19.9	16.1	3.6	0.3
Other elms	28.4	26.2	2.2	0.1
River birch	0.1	0.1	...	...
Other birches	42.8	39.5	2.6	0.7
Hackberry	8.3	6.0	1.8	0.5
Black locust	38.2	31.0	3.3	3.8
Other locusts	2.6	1.0	1.4	0.2
Sassafras	22.7	16.4	5.8	0.5
Dogwood	6.2	1.9	4.2	0.1
Holly	0.5	0.4	0.1	...
Other commercial	26.7	20.0	4.4	2.3
Total hardwoods	3827.1	3548.3	215.0	63.8
Noncommercial	82.0	...	82.0	...
All species	5348.6	4961.3	322.4	65.0

Table 37–*Volume of sawtimber for tree grade 1 on timberland by detailed species and diameter class, East Tennessee, 1989*

Species	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Shortleaf pine	204.2	22.5	77.2	41.5	51.0	5.3	6.7	...	...
Loblolly pine	24.4	3.0	14.7	6.7	...	...	...	...	...
Virginia pine	42.2	8.1	11.4	18.5	4.1	...	...	...	...
Pitch pine	10.5	...	1.9	...	3.3	5.3	...	...	...
Other s. pines	4.9	...	4.9	...	...	...	...	...	...
E. white pine	111.5	...	2.4	5.6	18.7	14.0	25.0	36.2	9.6
Redcedar	59.5	31.7	16.7	8.5	2.6	...	...	...	...
Hemlock-spruce	15.0	...	...	...	...	...	4.6	5.6	4.9
Total softwoods	472.1	65.3	129.2	80.9	79.7	24.6	36.2	41.8	14.5
Select white oaks	117.3	...	...	...	14.4	21.2	24.9	50.2	6.7
Select red oaks	184.9	...	...	...	1.7	21.8	52.8	83.1	25.5
Other white oaks	253.8	...	...	...	26.1	62.1	41.9	102.9	20.8
Other red oaks	147.0	...	...	...	12.0	29.2	38.8	61.2	5.8
Other hickories	101.9	...	...	...	17.9	18.9	25.9	37.0	2.1
Hard maple	26.2	...	...	...	4.8	11.6	...	6.1	3.7
Soft maple	16.3	...	...	...	2.9	3.6	2.4	7.5	...
Beech	6.2	...	...	...	...	...	...	...	6.2
Sweetgum	2.8	...	...	...	...	...	2.8	...	...
Blackgum	34.4	...	...	...	2.3	6.2	10.4	15.5	...
White ash	18.4	...	...	...	2.5	...	8.5	7.4	...
Other ashes	4.7	...	...	...	2.8	1.9	...	...	...
Basswood	15.3	...	...	...	...	8.0	6.2	1.1	...
Yellow-poplar	453.1	...	...	...	44.0	106.9	134.8	163.1	4.3
Magnolia	8.8	...	...	...	...	8.8	...	...	...
Black walnut	2.9	...	...	...	2.9	...	...	...	...
American elm	2.0	...	...	...	...	...	...	2.0	...
Other elms	4.1	...	...	...	...	...	...	4.1	...
Other birches	7.0	...	...	...	...	...	4.1	...	2.9
Other commercial	12.3	...	...	...	...	...	3.4	3.9	5.0
Total hardwoods	1419.5	...	...	...	134.1	300.2	356.9	545.2	83.0
All species	1891.6	65.3	129.2	80.9	213.8	324.8	393.2	587.0	97.5

Table 38–*Volume of sawtimber for tree grade 2 on timberland by detailed species and diameter class, East Tennessee, 1989*

Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Shortleaf pine	180.1	43.6	56.6	60.3	...	14.6	...	4.9	...
Loblolly pine	70.8	30.9	17.1	15.6	3.5	...	3.8	...	...
Virginia pine	145.1	14.7	60.5	36.8	19.7	13.4	...	...	...
Pitch pine	28.9	2.1	6.7	9.2	5.0	...	2.2	3.7	...
Other s. pines	4.3	3.2	1.2	...	...	...	...	...	...
E. white pine	265.9	25.1	25.0	18.5	49.9	40.3	34.1	63.7	9.4
Hemlock-spruce	24.8	8.1	10.4	...	...	...	2.7	3.6	...
Total softwoods	719.9	127.8	177.4	140.4	78.1	68.3	42.7	75.9	9.4
Select white oaks	243.8	...	...	27.6	46.6	54.3	59.2	56.1	...
Select red oaks	275.9	...	...	66.4	26.3	40.2	42.0	94.8	6.2
Other white oaks	441.2	...	...	59.2	103.5	91.1	96.2	84.7	6.3
Other red oaks	321.0	...	...	65.4	64.2	50.8	65.5	70.2	4.9
Other hickories	185.1	...	...	21.9	69.9	31.5	23.5	38.3	...
Hard maple	32.1	...	...	...	12.2	6.5	11.2	2.3	...
Soft maple	60.2	...	...	4.2	21.6	3.3	13.8	17.1	...
Beech	12.7	...	...	3.6	4.9	2.5	1.7	...	...
Sweetgum	29.5	...	...	16.6	7.9	...	2.6	2.4	...
Blackgum	28.2	...	...	5.9	8.3	5.7	3.8	4.6	...
White ash	53.9	...	...	10.7	11.7	13.6	8.8	9.2	...
Sycamore	20.2	...	...	2.9	2.8	2.1	4.1	2.2	6.2
Basswood	16.6	...	...	4.3	6.3	2.1	3.8	...	...
Yellow-poplar	515.7	...	...	87.4	128.6	100.6	108.8	87.7	2.6
Magnolia	16.1	...	...	4.8	9.4	...	1.9	...	...
Black walnut	11.4	...	...	...	8.3	3.1	...	...	...
Black cherry	2.0	...	...	...	...	2.0	...	...	...
American elm	4.1	...	...	...	1.6	...	2.5	...	...
Other elms	2.3	...	...	...	...	...	1.1	1.2	...
Other birches	2.6	...	...	...	...	...	2.6	...	...
Hackberry	6.6	...	...	2.6	2.3	1.6	...	...	...
Black locust	4.1	...	...	1.6	2.5	...	...	..	...
Sassafras	2.0	...	...	...	...	2.0	...	...	...
Other commercial	6.9	...	...	1.4	...	...	...	5.5	...
Total hardwoods	2294.3	...	...	386.8	538.8	413.0	453.2	476.3	26.2
All species	3014.2	127.8	177.4	527.1	616.9	481.3	495.9	552.2	35.6

Table 39–*Volume of sawtimber for tree grade 3 on timberland by detailed species and diameter class, East Tennessee, 1989*

Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Shortleaf pine	677.2	284.4	200.8	117.7	37.7	19.8	2.6	14.1	...
Loblolly pine	340.3	146.9	97.6	57.7	22.2	10.6	5.3	...	...
Virginia pine	1796.4	621.0	596.9	370.4	151.8	44.2	8.4	3.7	...
Pitch pine	149.7	37.1	32.4	33.4	38.7	...	8.1	...	...
Other s. pines	33.5	13.6	12.5	1.5	3.8	...	2.1	...	...
E. white pine	426.2	34.6	55.0	49.8	60.0	74.0	49.6	91.2	12.0
Hemlock-spruce	276.8	31.7	54.6	47.9	22.8	36.1	26.3	51.1	6.5
Total softwoods	3700.0	1169.1	1049.9	678.4	337.0	184.6	102.4	160.0	18.5
Select white oaks	423.7	...	95.1	106.5	73.8	61.8	22.2	64.3	...
Select red oaks	436.2	...	100.6	138.8	64.2	34.8	45.3	41.8	10.6
Other white oaks	1047.3	...	311.0	242.1	210.0	126.7	50.6	95.5	11.4
Other red oaks	697.3	...	118.3	218.8	124.2	103.3	68.4	64.2	...
Other hickories	525.9	...	179.6	150.0	94.7	56.2	33.0	12.5	...
Hard maple	115.7	...	33.4	38.8	18.7	...	5.8	16.1	3.0
Soft maple	192.8	...	80.3	54.5	14.6	12.6	16.2	14.6	...
Beech	48.1	...	4.3	3.6	9.2	4.7	9.9	16.4	...
Sweetgum	64.4	...	38.6	16.5	7.5	1.8	...	...	...
Blackgum	70.8	...	20.3	26.1	10.4	14.1	...	...	...
White ash	81.0	...	30.4	17.1	18.5	4.3	10.7	...	...
Other ashes	8.6	...	7.1	...	1.5	...	...	...	...
Sycamore	20.9	...	2.7	1.2	5.0	1.3	4.4	6.3	...
Basswood	38.5	...	11.4	21.5	1.4	2.7	1.5	...	...
Yellow-poplar	901.1	...	229.4	246.9	158.9	107.9	68.7	89.3	...
Magnolia	22.4	...	21.1	1.2	...	...	...	...	...
Black walnut	36.4	...	12.9	14.9	6.5	2.2	...	...	...
Black cherry	9.2	...	3.9	4.1	1.2	...	...	...	...
American elm	13.5	...	3.4	6.1	...	2.5	...	1.4	...
Other elms	27.1	...	16.4	3.0	2.4	...	5.2	...	
Other birches	18.9	...	10.3	2.9	0.9	...	...	4.8	...
Hackberry	5.4	...	...	3.2	...	2.3	...	...	...
Black locust	40.1	...	10.0	2.3	9.4	3.1	7.7	7.7	...
Sassafras	4.5	...	4.5	...	...	...	...	...	...
Other commercial	22.7	...	7.7	1.7	3.5	3.1	...	6.7	...
Total hardwoods	4872.5	...	1352.6	1321.8	836.4	545.5	349.6	441.7	24.9
All species	8572.4	1169.1	2402.5	2000.2	1173.4	730.1	452.0	601.7	43.4

Diameter class (inches at breast height)

Table 40–*Volume of sawtimber for tree grade 4 on timberland by detailed species and diameter class, East Tennessee, 1989*

		Diameter class (inches at breast height)							
Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
E. white pine	12.4	...	...	2.7	...	2.6	7.1	...	...
Total softwoods	12.4	...	...	2.7	...	2.6	7.1	...	...
Select white oaks	310.5	...	67.0	58.2	71.8	37.2	27.6	40.9	7.7
Select red oaks	191.5	...	35.8	27.6	23.5	32.1	21.8	38.3	12.4
Other white oaks	378.5	...	88.6	81.4	69.6	47.5	37.6	49.2	4.6
Other red oaks	432.9	...	120.9	104.1	70.3	53.6	35.4	39.7	8.9
Other hickories	209.0	...	70.1	31.8	51.2	12.5	23.7	19.9	...
Hard maple	68.4	...	14.6	25.9	3.2	4.8	5.0	14.9	...
Soft maple	118.8	...	42.1	38.4	14.2	9.2	2.7	11.1	1.2
Boxelder	1.3	...	1.3	...	...	...	...	...	...
Beech	118.4	...	9.1	24.3	23.1	14.0	4.2	43.7	...
Sweetgum	12.4	...	7.2	...	5.2	...	...	...	...
Blackgum	52.3	...	20.3	14.7	4.8	7.8	4.8	...	...
White ash	22.8	...	3.7	2.1	1.3	8.6	...	7.1	...
Other ashes	7.3	...	3.4	...	...	3.9	...	...	...
Sycamore	11.9	...	3.8	2.7	3.2	...	...	2.1	...
Basswood	10.6	...	1.5	3.8	...	...	...	5.3	...
Yellow-poplar	399.6	...	91.5	85.3	89.9	62.9	39.3	18.6	12.1
Magnolia	7.0	...	5.1	1.9	...	...	...	...	...
Black walnut	4.0	...	2.1	...	...	1.9	...	...	...
Black cherry	1.4	...	1.4	...	...	...	...	...	...
American elm	12.2	...	4.0	8.2	...	...	...	...	...
Other elms	24.0	...	4.7	7.6	...	9.3	...	...	2.4
Other birches	17.2	...	10.8	2.6	...	...	...	2.5	1.3
Black locust	6.2	...	2.8	1.2	2.3	...	...	...	...
Other locusts	1.6	...	1.6	...	...	...	...	...	...
Holly	2.4	...	...	...	...	2.4	...	...	...
Other commercial	10.9	...	2.4	0.6	...	...	2.3	5.5	...
Total hardwoods	2432.9	...	615.7	522.4	433.6	307.5	204.4	298.7	50.6
All species	2445.4	...	615.7	525.1	433.6	310.1	211.5	298.7	50.6

Graphics

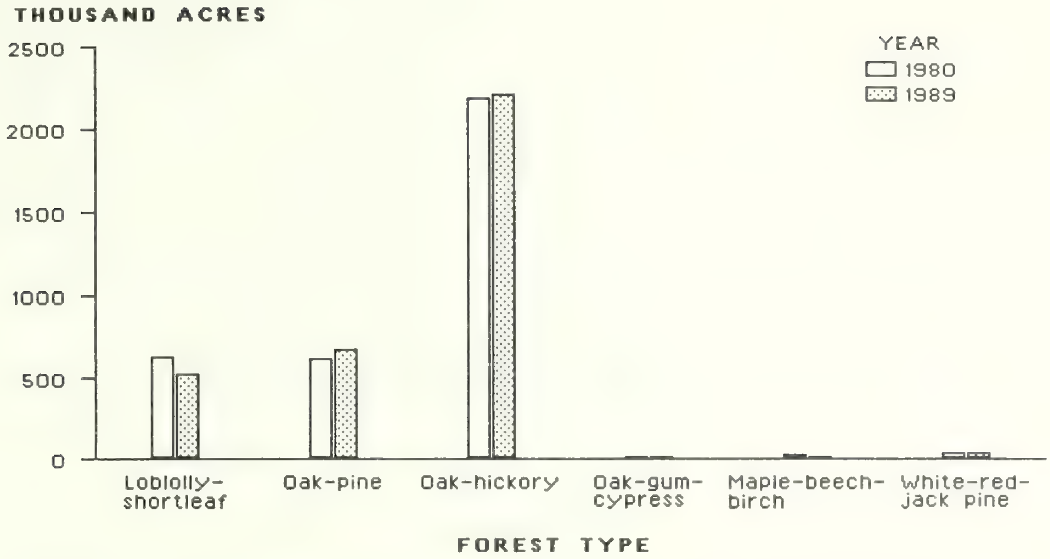

Figure 1.--Area of timberland by forest type, East Tennessee, 1980 and 1989.

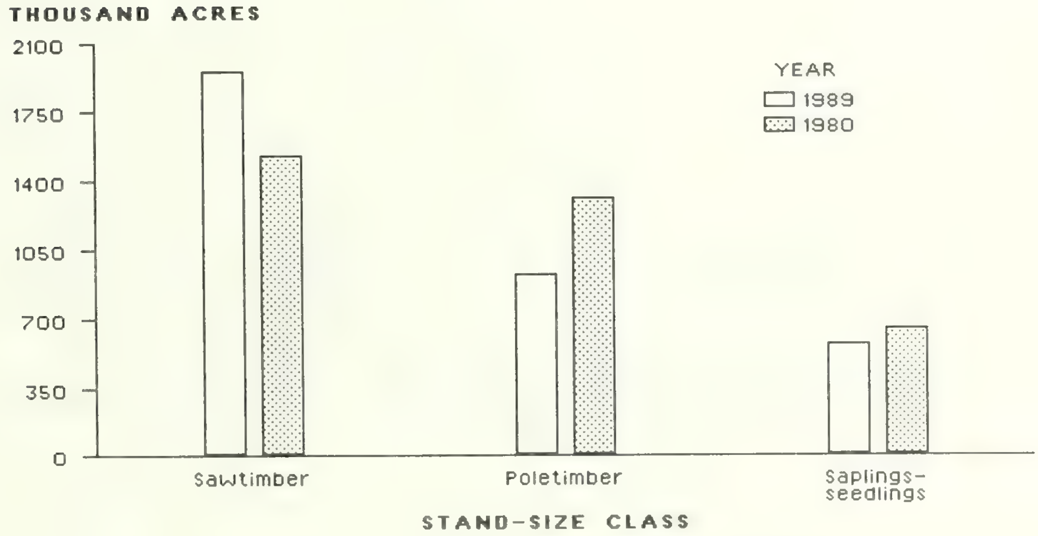

Figure 2.--Area of timberland by stand-size class, East Tennessee, 1980 and 1989.

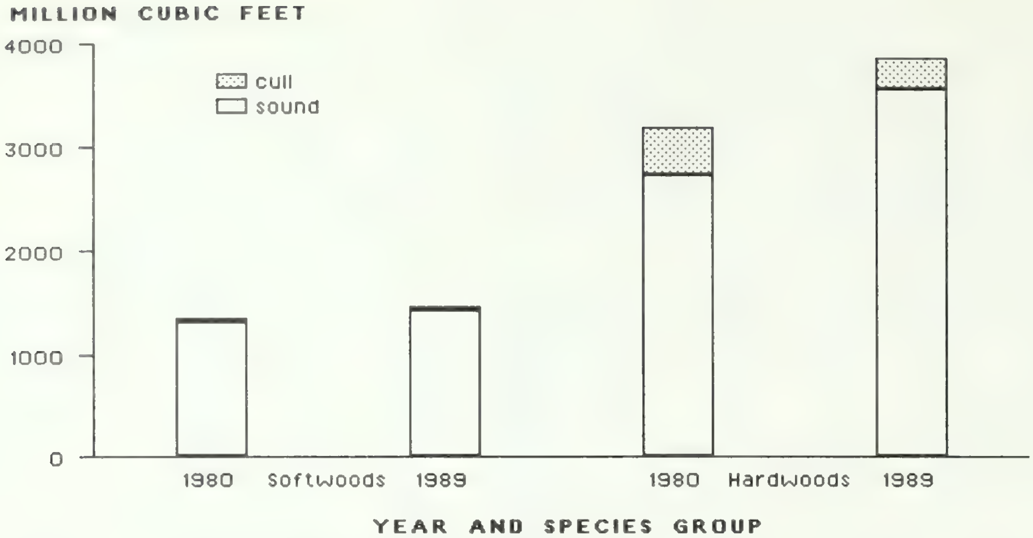

Figure 3.--Volume of timber on timberland by species group and class of timber, East Tennessee, 1980 and 1989.

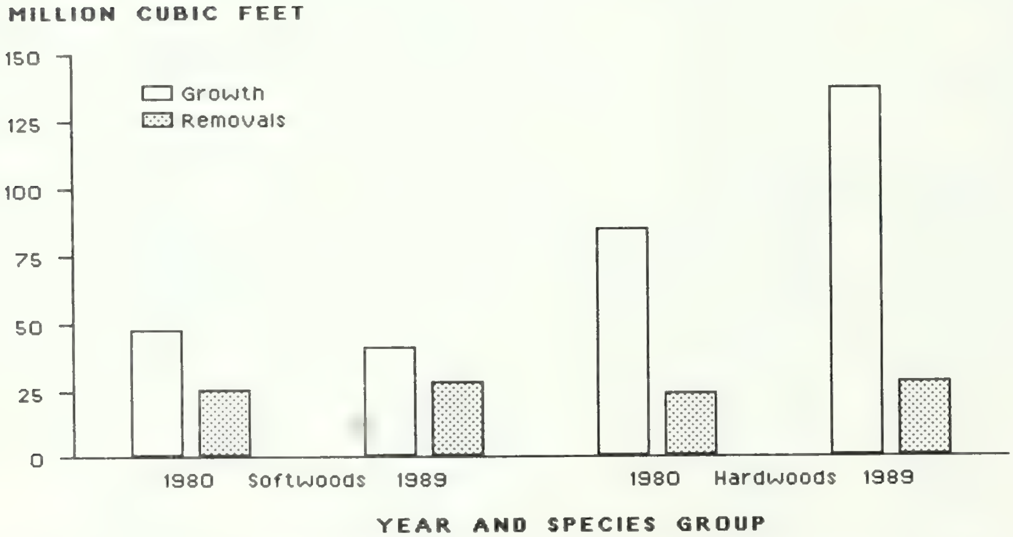

Figure 4.--Average net annual growth and average annual removals of growing stock on timberland by species group, East Tennessee, 1980 and 1989.

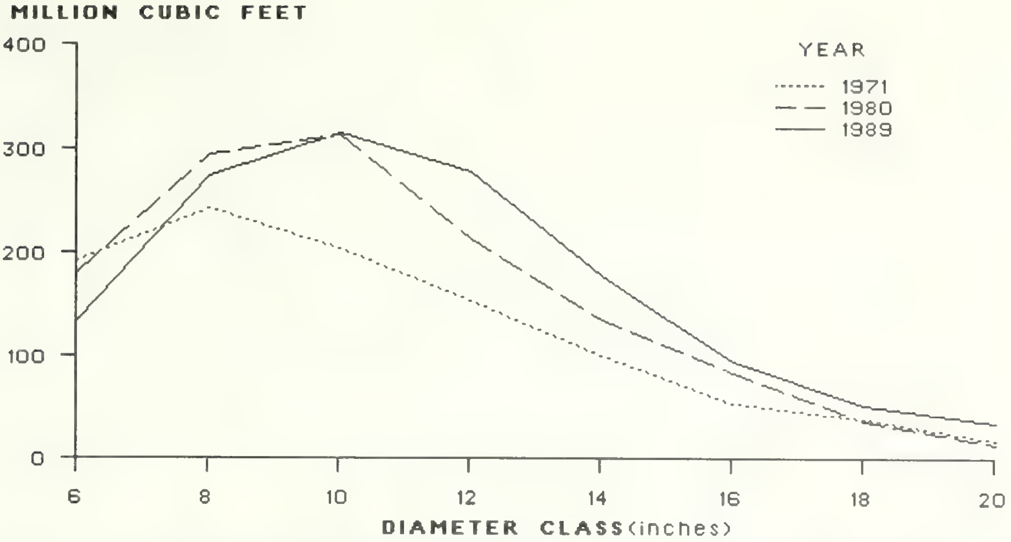

Figure 5.--Volume of softwood growing stock on timberland by diameter class, East Tennessee, 1971, 1980, and 1989.

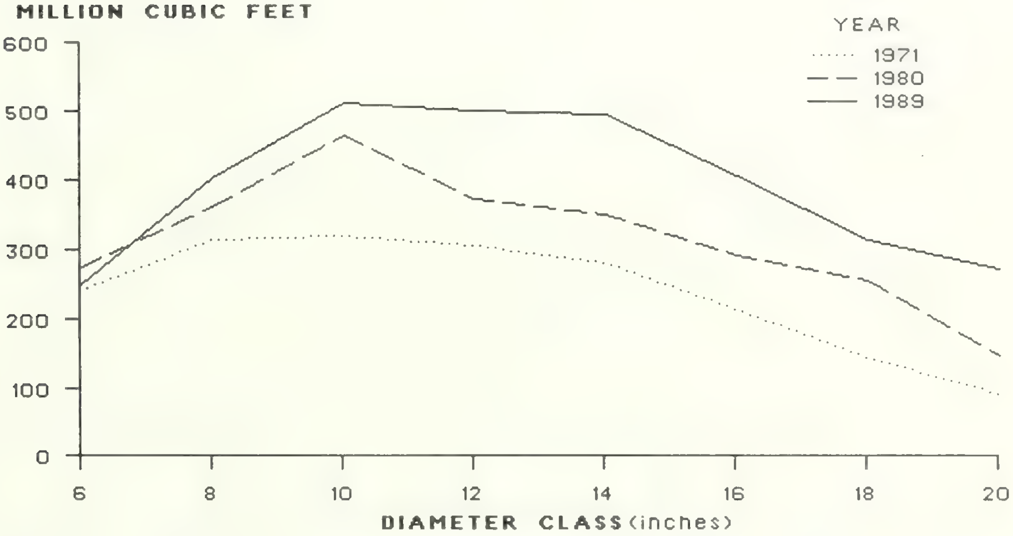

Figure 6.--Volume of hardwood growing stock on timberland by diameter class, East Tennessee, 1971, 1980, and 1989.

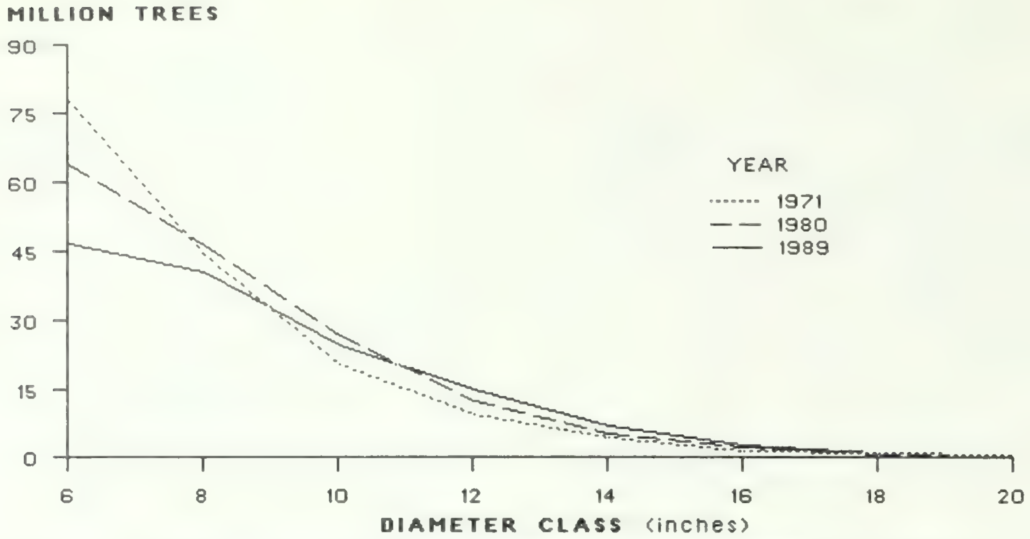

Figure 7.--Number of softwood growing-stock trees on timberland by diameter class, East Tennessee, 1971, 1980, and 1989.

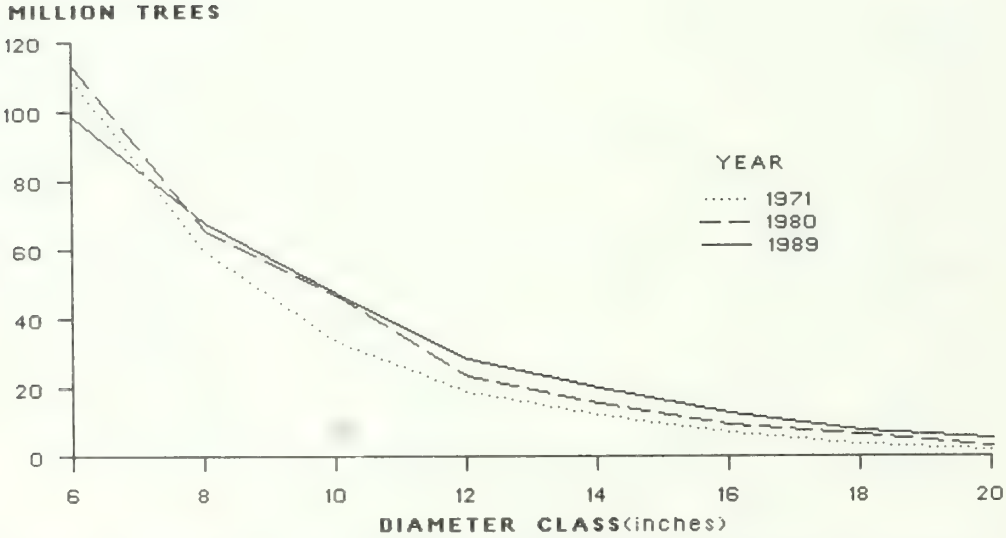

Figure 8.--Number of hardwood growing-stock trees on timberland by diameter class, East Tennessee, 1971, 1980, and 1989.

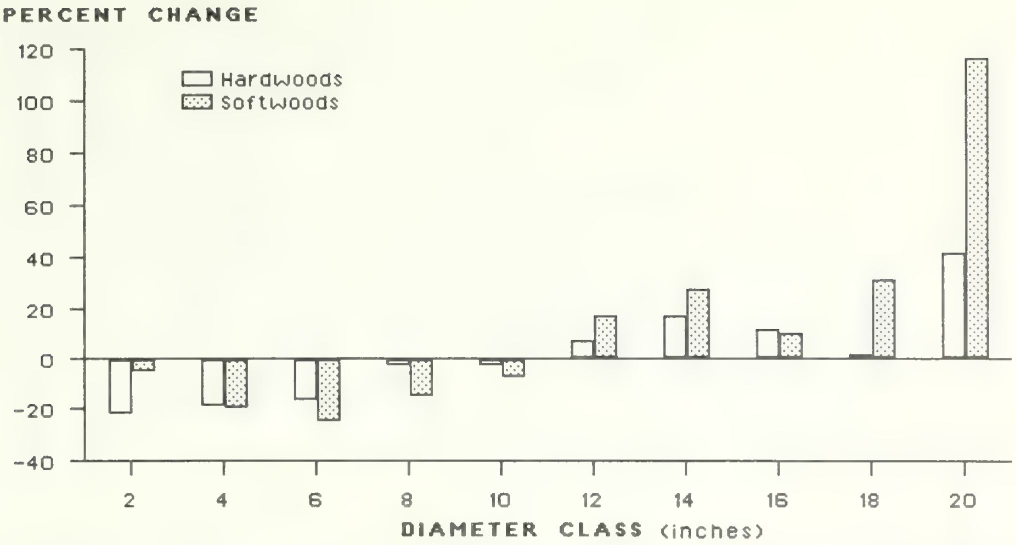

Figure 9.--Percent change in the number of live trees on timberland by species group and diameter class, East Tennessee, 1980 and 1989.

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Tabulates forest resource information from a new inventory of the East Unit of Tennessee.

Additional Keywords: Area, volume, forest type, stand size, ownership.

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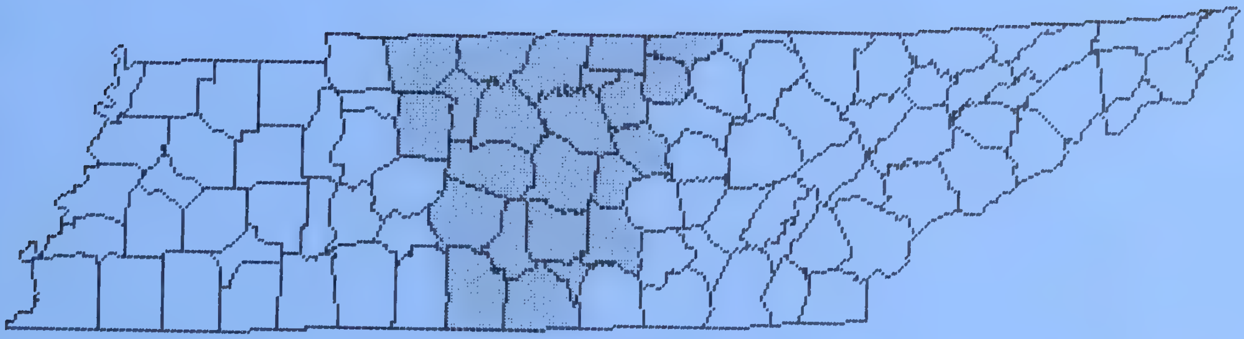
Dennis M. May and John S. Vissage

UNIVERSITY



SUMMARY

The 1989 survey of the Central Unit of Tennessee revealed the following:

- Timberland now covers 2,461.3 thousand acres, an increase of 14 percent since 1980.
- Ninety-five percent of the unit's timberland is privately owned.
- Cedar and mixed cedar-hardwood stands occupy 456.1 thousand acres of timberland.
- Oak-hickory forests account for 79 percent of the unit's timberland.
- Area in sawtimber-sized stands increased by 250 thousand acres with most of the increase in oak-hickory forest types.
- The number of hardwood growing-stock trees fell 17 percent, while softwood numbers increased 26 percent.
- Hardwood growing-stock volume climbed 55 percent to 2,304.7 million cubic feet and softwood growing-stock volume climbed 74 percent to 138.1 million cubic feet.
- Softwood sawtimber volumes more than doubled and hardwood sawtimber volumes increased by two-thirds since 1980.
- Hardwood sawtimber quality declined since 1980.
- Net growth increased for both growing stock and sawtimber despite a doubling in mortality.
- Removals increased for both growing stock and sawtimber but were concentrated in the sawtimber portion of the inventory.
- Growth exceeds removals by roughly 3 to 1.

FOREWORD

The Southern Forest Survey, an activity of the Southern Forest Experiment Station Forest Inventory and Analysis work unit, covers the States of Alabama, Arkansas, Louisiana, Mississippi, Oklahoma, Tennessee, and Texas, and the island of Puerto Rico.

This survey is part of the nationwide Forest Survey originally authorized by the McSweeney-McNary Act of 1928. More recent legislation pertinent to the survey mission includes the Forest and Rangeland Renewable Resources Planning Act of 1974 and the Forest and Rangeland Renewable Resources Research Act of 1978. The survey mission is to develop, analyze, and maintain renewable forest resource information. This information is essential for formulation of forest policies and programs.

July 1989

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*Core tables are presented in response to the Southern Industrial Forestry Research Council's recommendations. These tables are identical among Forest Inventory and Analysis units in the eastern United States.

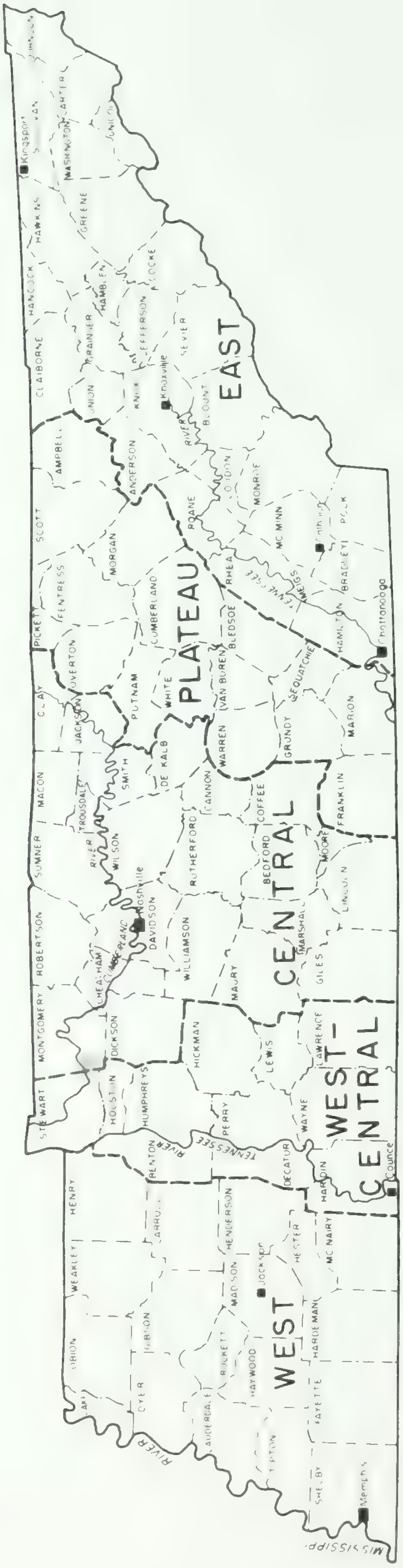

Figure I.-The forest survey regions of Tennessee.

Forest Statistics for Central Tennessee Counties – 1989

Dennis M. May and John S. Vissage

INTRODUCTION

Tabulated results were derived from data obtained during a recent inventory of 23 counties comprising the Central Unit of Tennessee (fig. I). Tables 1-25 were developed to provide compatibility among Forest Inventory and Analysis Projects. Tables 26-40 are supplementary tables and may change from unit to unit or State to State to address specific resource issues.

Data on forest acreage and timber volume were secured by a three-step process. A forest-nonforest classification using aerial photographs was accomplished for points representing approximately 230 acres. These photo classifications were adjusted based on ground observations at sample locations representing approximately 3,840 acres. Finally, field measurements were made at forest locations on the intersections of grid lines spaced 3 miles apart. At these forest locations, per acre estimates were obtained from trees measured on ten 37.5 basal area factor prism points.

The sampling methods were designed to achieve suitable sampling errors for estimates of area and volume at the State level. Sampling error increases as the area or volume considered decreases. The sampling errors presented in table I, equal to one standard deviation for the sample data, may be used to construct confidence intervals for population estimates. For example, at the 95 percent confidence level, the confidence interval for growing-stock volume (in million cubic feet) in the Central Unit of Tennessee (with a sampling error or 4.7 percent) is

$$2{,}442.7 \pm 1.96(0.047 \times 2{,}442.7) = 2{,}442.7 \pm 225.0$$

where 1.96 is the number of standard deviations. This confidence interval indicates a 95-percent degree of confidence that the range, 2,217.7 to 2,667.7 million cubic feet, will contain the true growing-stock inventory volume.

Sampling errors for sub-groups of counties in the unit may be estimated by the following formula:

$$SE_g = \frac{SE_t\sqrt{X_t}}{\sqrt{X_g}}$$

where:

SE = standard error of estimate (expressed as a percent)

Table I—*Sampling errors*[1] *for timberland, growing stock, and sawtimber, Central Tennessee Counties, 1989*

County	Timberland	Growing stock Volume	Growing stock Growth	Growing stock Removals	Sawtimber volume
	Percent				
Bedford	2.9	32.8	17.8	39.5	38.6
Cannon	4.8	20.4	25.4	36.1	27.8
Cheatam	3.7	15.6	9.2	38.3	21.1
Clay	1.8	12.2	23.0	28.9	15.9
Coffee	2.0	10.7	17.6	25.0	12.8
Davidson	2.9	23.7	21.7	23.7	29.6
De Kalb	3.1	20.2	11.9	(2)	24.7
Dickson	2.3	16.2	17.5	33.0	18.6
Giles	2.6	15.1	15.2	19.8	21.5
Jackson	3.6	22.4	15.3	35.0	27.6
Lincoln	2.5	18.1	14.7	26.4	23.7
Macon	3.1	16.6	18.8	49.1	18.4
Marshall	2.4	28.0	25.7	35.6	38.5
Maury	2.4	17.8	20.0	47.3	28.3
Montgomery	2.2	12.1	15.7	(2)	14.4
Moore	2.7	32.9	23.7	...	44.7
Robertson	2.6	16.1	11.8	41.2	16.6
Rutherford	3.2	20.1	20.6	...	25.7
Smith	4.0	45.6	35.0	15.3	(2)
Sumner	2.0	20.5	19.9	16.9	25.2
Trousdale	4.9	26.8	47.6	...	31.3
Williamson	2.4	16.4	15.0	38.1	18.9
Wilson	2.0	24.1	35.0	36.9	30.6
All counties	0.6	4.7	4.8	8.8	5.9

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[1] By random-sampling formula.

[2] Sampling error greater than 50.

X = variable of interest
(area or volume)
g = group of counties to be combined
t = total for the Unit.

For example, the sampling error estimate of growing-stock volume for Davidson, Rutherford, and Wilson counties is 15.7 percent. Thus, the 95 percent confidence interval for growing-stock volume is 218.1 ± 67.1 million cubic feet.

Ownership information is obtained through the 3-mile grid sample outlined above. County courthouse records are used to obtain ownership information for each forested plot. An expansion factor representing timberland area in that county is then applied to the ownership group the plot represents. Next, the ownership groups are totaled for each county. Thus, acreages reported at the county level are estimates and may not exactly match known totals for each ownership category within that county.

In order to achieve greater compatibility among Forest Inventory and Analysis Projects, a new tree classification system has been in effect since the 1988 Arkansas survey. Tree grade 5 is used to designate trees currently or prospectively capable of producing at least one 12-foot log or two 8-foot logs in the saw-log portion but not able to produce a 12-foot log in the butt 16 feet. These trees, formerly classed as rough or rotten, are now included in growing stock. Table II shows the impact of this change on volume and growth.

HIGHLIGHTS

Area

The 23 counties of the Central Unit of Tennessee encompass the Central Basin as well as portions of the surrounding Highland Rim. In the past, areas of productive soils and gentle terrain have encouraged agricultural development of the unit. Agricultural uses, mainly pastures, have been expanding at the expense of the unit's forests since the 1960's. This trend of steadily declining forest area has been reversed in recent years with the reversion of 300 thousand acres back to timberland. Today, the unit contains 2,461.3 thousand acres of timberland, a full 40 percent of the unit. Only one out of every 20 acres of timberland is in public ownership. The remainder is in private ownership, of which farmers and individuals are the two dominant owners.

The Central Unit is unique in that it contains sizeable acreages of cedar forests. Approximately 95 percent of both the loblolly-shortleaf and oak-pine forest type groups is composed of cedar or cedar-hardwood forest types. In total, cedar and mixed cedar stands occupy 456.1 thousand acres of timberland. Although the cedar types are sizeable, hardwood forests still predominate in the unit. Oak-hickory forest types account for 79 percent of the unit's timberland. A small proportion, 2 percent, is in bottomland hardwoods, the only forest type group to decline in acreage since 1980.

In addition to increasing in area, the unit's timberlands have been maturing. Since 1980, an additional 250 thousand acres have been classified as sawtimber-sized stands. This maturation process has not been evenly distributed across the unit's forests. Almost all of the increase in sawtimber-sized stands occurred in the oak-hickory forest types. The softwood and oak-pine forest types, while still maturing, are younger, composed of predominantly pole and sapling-sized stands. This younger stand-size distribution is a likely consequence of past exploitation of the cedar resource that comprises most of these two forest type groups.

Timber Inventory

The maturing nature of the unit's hardwood forests resulted in a 17-percent decline in hardwood growing-stock

Table II–*Changes in volume and growth estimates due to inclusion of tree grade 5 in growing-stock inventory, Central Tennessee Counties, 1989*

	Tree grade 5		
	Excluded from growing stock	Included in growing stock	Percent change
	Million cubic feet		
Softwood:			
Growing-stock volume	127.2	138.1	8.6
Rough and rotten volume	39.2	28.4	-27.6
Growing-stock growth	5.8	6.9	19.0
Hardwood:			
Growing-stock volume	2148.0	2304.7	7.3
Rough and rotten volume	504.1	347.5	-31.1
Growing-stock growth	79.0	95.1	20.4
	Million board feet		
Softwood:			
Sawtimber volume	178.0	197.2	10.8
Sawtimber growth	10.4	12.3	18.3
Hardwood:			
Sawtimber volume	6602.1	7080.0	7.2
Sawtimber growth	318.2	367.0	15.3

numbers with all of the loss contained in the 2- and 4-inch size classes. At the same time, growing-stock volume of 5-inch and larger hardwoods increased by more than half to 2,304.7 million cubic feet. The maturation of the hardwood resource is especially evident in the sawtimber portion of the inventory, which experienced a 52-percent increase in sawtimber-sized trees with an accompanying 68-percent rise in sawtimber volume to 7,080.0 million board feet.

The 26-percent increase in growing-stock numbers experienced by the younger softwood resource occurred across all diameter classes. As a result, softwood growing-stock volume climbed 74 percent to 138.1 million cubic feet. Although three-quarters of the softwood volume is contained in the generally younger softwood and oak-pine forest type groups, softwood sawtimber volume more than doubled since 1980, climbing to 197.2 million board feet. These volume increases are evidence that the once exploited cedar resource, which makes up the vast majority of the softwood volume, is recovering.

With 97 percent of the unit's sawtimber volume in hardwoods, sawtimber quality is of special concern. Despite increases in hardwood sawtimber volumes, volume in grade 1 trees declined by 20 percent since 1980, while volumes in lower grades increased, especially grade 4 which increased by 151 percent. Although the increasing lower grades may provide the stock for future increases in higher grade trees, the proportion of sawtimber volume contained in grades 1 and 2 has fallen from 40 percent to 31 percent since 1980. This leaves little doubt that the oak-hickory forests of the unit, which contain 94 percent of the hardwood sawtimber inventory, are declining in quality as they mature.

Growth, Removals, and Mortality

The increasing inventory of the unit is a consequence of a favorable growth-to-drain situation since 1980. On an annual basis, net growth for the unit averaged 102.0 million cubic feet for growing stock and 379.3 million board feet for sawtimber. These growth figures reflect the physical change in the inventory over the survey period as well as a growing-stock definition change initiated since the 1980 survey. As a result, these growth estimates are not directly comparable to past growth estimates. Using comparable growth estimates that exclude the definition change (table II), net growth increased 54 percent for growing stock and 82 percent for sawtimber. These net growth increases were attained even though mortality doubled since 1980. Oak mortality increased by a factor of 4 and was responsible for the majority of the increase in mortality since 1980. This large increase in oak mortality is a possible indicator of the impact of oak decline in the unit.

Removals became a larger source of drain on the inventory over the survey period and were concentrated in the sawtimber portions of the inventory. On an average annual basis, sawtimber removals climbed 29 percent to 121.9 million board feet, while growing-stock removals only increased 7 percent to 30.2 million cubic feet. As a consequence of the recovering cedar inventory, cedar sawtimber removals also increased and were mainly responsible for doubling softwood sawtimber removals since 1980. The increase in hardwood sawtimber removals was distributed across all species, but the oaks are still the predominant species cut. Even at these increased levels, growth still exceeds removals by roughly 3 to 1 for both the growing-stock and sawtimber portions of the inventory.

In total, the unit's timberlands are increasing in both area and volume. The softwood (cedar) resource is recovering from past exploitation, while the hardwood resource is maturing. Growth exceeds removals by 3 to 1, but concentration of hardwood removals in quality trees has reduced the quality of this maturing resource.

DEFINITION OF TERMS

Average net annual growth. — Average net annual volume increase for the inter-survey period.

Average annual mortality. — Average annual sound-wood volume of growing-stock trees dying from natural causes.

Average annual removals. — Average net annual volume of growing-stock trees removed from the inventory by harvesting, cultural operations (such as timber-stand improvement), land clearing, or changes in land use.

Commercial species. — Tree species which normally develop into trees suitable for industrial wood products.

Forest land. — Land at least 16.7 percent stocked by forest trees of any size, or formerly having such tree cover, and not currently developed for nonforest use.

Forest type. — A classification of forest land based upon the species forming a plurality of live-tree stocking.

Growing-stock trees. — Live trees of commercial species. Rough and rotten trees are excluded.

Growing-stock volume. — The cubic-foot volume of sound wood in growing-stock trees at least 5.0 inches in diameter at breast height, from a 1-foot stump to a minimum 4.0-inch top diameter outside bark of the central stem, or to the point where the central stem breaks into limbs.

Live trees. — Commercial and noncommercial tree species of sapling size or larger.

Natural stands. — Stands with no evidence of artificial regeneration. This includes those established by seed tree regeneration methods.

Noncommercial species. — Tree species of typically small size, poor form, or inferior quality which normally do not develop into trees suitable for industrial wood products.

Planted stands. — Stands with some evidence of planting or direct seeding.

Poletimber trees. — Growing-stock trees at least 5.0 inches in diameter at breast height, but smaller than sawtimber size.

Reserved timberland. — Productive public forest land withdrawn from timber utilization through statute or administrative regulations.

Rotten trees. — Live trees of commercial species that do not contain at least one 12-foot log or two 8-foot logs in the saw-log portion, now or prospectively, primarily because of rot.

Rough trees.—Live trees of commercial species that do not contain at least one 12-foot log or two 8-foot logs in the saw-log portion, now or prospectively, primarily because of roughness or poor form. Also included are all live trees of noncommercial species.

Saplings.—Growing-stock trees at least 1.0 inches but less than 5.0 inches in diameter at breast height.

Sawtimber trees.—Live trees that contain at least one 12-foot log or two 8-foot logs in the saw-log portion, and meet regional specifications for freedom from defect. Softwoods must be at least 9.0 inches in diameter at breast height and hardwoods at least 11.0 inches in diameter at breast height.

Sawtimber volume.—Sound-wood volume of the saw-log portion of growing-stock sawtimber trees in board feet, International 1/4-inch rule and in cubic feet.

Seedlings.—Growing-stock trees less than 1.0 inch in diameter at breast height and greater than one foot tall for hardwoods, greater than six inches tall for softwoods, and greater than one-half inch in diameter at ground level for longleaf pine.

Select red oaks.—A classification of several red oak species composed of: cherrybark, Shumard, and northern red oaks.

Select white oaks.—A classification of several white oak species composed of: white, swamp chestnut, swamp white, chinkapin, Durand, and bur oaks.

Site class.—A classification of forest land in terms of inherent capacity to grow crops of industrial wood.

Stand-size class.—A classification of forest land based on the diameter class of live trees on the sampled area; that is, sawtimber, poletimber, or sapling and seedling.

Timberland.—Forest land that is producing, or is capable of producing, crops of industrial wood and not withdrawn from timber utilization. Timberland is synonymous with "commercial forest land" in prior reports.

Tree grade.—A classification of the volume of the saw-log portion of sawtimber trees, based on: 1) the log grade of the butt log, or 2) ability to produce at least one 12-foot or two 8-foot logs in the upper-section of the saw-log portion.

Woodland.—Forest land incapable of yielding crops of industrial wood because of adverse site conditions.

CORE TABLES 1-25

Table 1–*Area by county and land class, Central Tennessee Counties, Tennessee, 1989*

County	All land[1]	Forest land				Nonforest land
		Total	Timberland[2]	Woodland[3]	Reserved timberland	
	Thousand acres					
Bedford	304.1	74.6	74.6	...	...	229.5
Cannon	170.0	88.5	88.5	...	...	81.5
Cheatam	194.3	118.2	118.2	...	...	76.1
Clay	145.3	105.1	105.1	...	...	40.2
Coffee	274.2	114.4	114.2	...	0.2	159.8
Davidson	320.5	108.7	108.1	...	0.6	211.8
De Kalb	186.0	114.2	114.2	...	...	71.8
Dickson	314.0	174.3	174.3	...	...	139.7
Giles	390.7	171.8	171.8	...	...	218.9
Jackson	197.0	135.9	135.9	...	...	61.1
Lincoln	365.3	136.7	136.7	...	...	228.6
Macon	196.6	77.0	77.0	...	...	119.6
Marshall	241.0	89.6	89.6	...	...	151.3
Maury	394.4	133.0	133.0	...	...	261.4
Montgomery	344.7	136.9	136.9	...	0.1	207.8
Moore	82.4	36.6	36.6	...	...	45.8
Robertson	304.6	53.0	53.0	...	...	251.5
Rutherford	387.5	155.7	155.7	...	...	231.8
Smith	200.2	81.0	81.0	...	...	119.1
Sumner	338.6	88.2	88.2	...	...	250.4
Trousdale	73.1	30.0	30.0	...	...	43.2
Williamson	373.6	142.0	142.0	...	...	231.6
Wilson	365.1	98.1	97.0	...	1.1	267.0
All counties	6163.2	2463.4	2461.3	...	2.1	3699.7

[1] From U.S. Bureau of the Census.

[2] Forest land (formerly termed commercial forest land) that is producing or capable of producing at least 20 cubic feet of industrial wood per acre per year. Includes areas which may be inaccessible or inoperable by current standards. Excludes reserved timberlands.

[3] Forest land incapable of producing 20 cubic feet of industrial wood per acre per year under natural conditions because of adverse site conditions.

Table 2–*Area of timberland by county and ownership class, Central Tennessee Counties, 1989*

County	All ownerships	National forest	Misc. federal	State	County and municipal	Forest industry[1]	Farmer	Corporate[2]	Individual[2]
	Thousand acres								
Bedford	74.6	...	...	...	...	5.3	32.0	...	37.3
Cannon	88.5	...	...	...	...	...	41.6	...	46.8
Cheatam	118.2	...	...	23.6	...	...	17.7	11.8	65.0
Clay	105.1	...	...	...	...	...	72.8	...	32.3
Coffee	114.2	...	10.4	...	...	...	51.9	15.6	36.3
Davidson	108.1	...	6.4	...	6.4	...	12.7	6.4	76.3
De Kalb	114.2	...	11.4	...	...	...	28.5	...	74.2
Dickson	174.3	...	...	...	...	...	114.2	12.0	48.1
Giles	171.8	...	...	...	...	9.8	103.1	...	58.9
Jackson	135.9	...	...	...	...	...	31.4	...	104.5
Lincoln	136.7	...	...	...	...	...	83.2	...	53.5
Macon	77.0	...	...	...	...	...	56.0	...	21.0
Marshall	89.6	...	...	...	...	...	69.7	5.0	14.9
Maury	133.0	...	...	...	6.7	...	53.2	13.3	59.9
Montgomery	136.9	...	31.1	...	...	6.2	24.9	...	74.7
Moore	36.6	...	...	...	...	...	20.9	5.2	10.5
Robertson	53.0	...	...	...	...	...	37.9	7.6	7.6
Rutherford	155.7	...	5.6	5.6	5.6	...	44.5	5.6	88.9
Smith	81.0	...	...	...	...	...	67.5	...	13.5
Sumner	88.2	...	...	...	...	...	56.7	...	31.5
Trousdale	30.0	...	...	...	...	...	...	...	30.0
Williamson	142.0	...	...	...	...	...	78.9	...	63.1
Wilson	97.0	...	...	15.3	...	...	51.0	5.1	25.5
All counties	2461.3	...	64.8	44.5	18.6	21.4	1150.2	87.5	1074.3

[1] Includes land leased to forest industry.

[2] Indian land will be classed as corporate or individual as defined by the Bureau of Indian Affairs.

Table 3–*Area of timberland by county and forest type group, Central Tennessee Counties, 1989*

		Forest type group					
			Loblolly-shortleaf[1] pine				
County	Total	White-red jack pine	Planted	Natural	Oak-[2] pine	Oak-hickory	Oak-gum-cypress
				Thousand acres			
Bedford	74.6	...	...	16.0	10.7	42.6	5.3
Cannon	88.5	...	...	5.2	10.4	72.9	...
Cheatam	118.2	...	...	...	...	118.2	...
Clay	105.1	...	...	...	8.1	97.0	...
Coffee	114.2	...	...	...	...	109.0	5.2
Davidson	108.1	...	...	...	12.7	95.4	...
De Kalb	114.2	...	...	11.4	22.8	74.2	5.7
Dickson	174.3	...	...	...	6.0	168.3	...
Giles	171.8	4.9	...	4.9	4.9	152.2	4.9
Jackson	135.9	...	...	...	31.4	104.5	...
Lincoln	136.7	...	...	17.8	17.8	89.1	11.9
Macon	77.0	...	...	...	...	77.0	...
Marshall	89.6	...	...	5.0	24.9	59.7	...
Maury	133.0	...	...	6.7	6.7	119.7	...
Montgomery	136.9	...	...	...	12.4	124.4	...
Moore	36.6	...	...	...	...	36.6	...
Robertson	53.0	...	...	...	...	53.0	...
Rutherford	155.7	...	...	50.0	38.9	66.7	...
Smith	81.0	...	...	13.5	6.8	60.8	...
Sumner	88.2	...	...	12.6	...	75.6	...
Trousdale	30.0	...	...	...	12.0	18.0	...
Williamson	142.0	...	...	15.8	15.8	105.2	5.3
Wilson	97.0	...	...	15.3	61.2	20.4	...
All counties	2461.3	4.9	...	174.2	303.5	1940.5	38.3

[1] Includes redcedar forest type.

[2] Includes redcedar-hardwood forest type.

Table 4–*Area of timberland by county and stand-size class, Central Tennessee Counties, 1989*

County	All classes	Stand-size class		
		Sawtimber	Poletimber	Sapling-seedling
	Thousand acres			
Bedford	74.6	26.6	32.0	16.0
Cannon	88.5	31.2	41.6	15.6
Cheatam	118.2	59.1	41.4	17.7
Clay	105.1	16.2	48.5	40.4
Coffee	114.2	72.7	31.1	10.4
Davidson	108.1	44.5	50.9	12.7
De Kalb	114.2	57.1	40.0	17.1
Dickson	174.3	102.2	48.1	24.0
Giles	171.8	34.4	83.4	54.0
Jackson	135.9	52.3	47.0	36.6
Lincoln	136.7	29.7	65.4	41.6
Macon	77.0	49.0	14.0	14.0
Marshall	89.6	34.8	19.9	34.8
Maury	133.0	39.9	53.2	39.9
Montgomery	136.9	56.0	49.8	31.1
Moore	36.6	26.1	10.5	...
Robertson	53.0	37.9	7.6	7.6
Rutherford	155.7	33.4	50.0	72.3
Smith	81.0	13.5	47.3	20.3
Sumner	88.2	63.0	12.6	12.6
Trousdale	30.0	6.0	24.0	...
Williamson	142.0	52.6	78.9	10.5
Wilson	97.0	25.5	35.7	35.7
All counties	2461.3	963.6	932.8	565.0

Table 5—*Area of timberland by county and site class, Central Tennessee Counties, 1989*

County	All classes	Site class (cubic feet/acre/year)				
		>165	120-165	85-120	50-85	<50
	Thousand acres					
Bedford	74.6	...	10.7	16.0	16.0	32.0
Cannon	88.5	5.2	10.4	15.6	31.2	26.0
Cheatam	118.2	5.9	17.7	17.7	70.9	5.9
Clay	105.1	...	...	32.3	64.7	8.1
Coffee	114.2	...	15.6	57.1	41.5	...
Davidson	108.1	6.4	...	19.1	57.2	25.4
De Kalb	114.2	...	40.0	34.2	17.1	22.8
Dickson	174.3	6.0	18.0	30.0	102.2	18.0
Giles	171.8	...	39.3	24.5	78.5	29.5
Jackson	135.9	...	15.7	20.9	73.2	26.1
Lincoln	136.7	...	...	17.8	71.3	47.5
Macon	77.0	...	21.0	49.0	7.0	...
Marshall	89.6	...	10.0	10.0	59.7	10.0
Maury	133.0	...	20.0	20.0	46.6	46.6
Montgomery	136.9	6.2	12.4	56.0	49.8	12.4
Moore	36.6	...	...	10.5	20.9	5.2
Robertson	53.0	...	...	30.3	15.2	7.6
Rutherford	155.7	...	...	...	55.6	100.1
Smith	81.0	...	...	20.3	54.0	6.8
Sumner	88.2	...	12.6	25.2	44.1	6.3
Trousdale	30.0	...	...	...	24.0	6.0
Williamson	142.0	5.3	26.3	36.8	57.9	15.8
Wilson	97.0	5.1	...	...	66.4	25.5
All counties	2461.3	40.1	269.5	543.3	1124.9	483.6

Table 6–*Area of timberland by county and stocking classes of growing-stock trees, Central Tennessee Counties, 1989*

County	All classes	Stocking class (percent) >130	100-130	60-100	16.7-60	<16.7
	- - - - - - - -	- - - - - -	*Thousand acres*	- - - - - -	- - - - - -	- - - - - -
Bedford	74.6	...	16.0	42.6	16.0	...
Cannon	88.5	...	10.4	52.0	20.8	5.2
Cheatam	118.2	...	11.8	70.9	35.5	...
Clay	105.1	...	...	80.8	24.3	...
Coffee	114.2	...	31.1	67.5	15.6	...
Davidson	108.1	...	...	63.6	44.5	...
De Kalb	114.2	...	28.5	85.6	...	...
Dickson	174.3	...	24.0	132.2	12.0	6.0
Giles	171.8	...	19.6	93.3	58.9	...
Jackson	135.9	...	15.7	73.2	41.8	5.2
Lincoln	136.7	...	29.7	71.3	35.7	...
Macon	77.0	...	7.0	63.0	7.0	...
Marshall	89.6	...	...	49.8	39.8	...
Maury	133.0	...	...	113.1	20.0	...
Montgomery	136.9	...	12.4	74.7	49.8	...
Moore	36.6	...	5.2	20.9	10.5	...
Robertson	53.0	...	...	45.5	7.6	...
Rutherford	155.7	...	11.1	72.3	50.0	22.2
Smith	81.0	...	13.5	47.3	20.3	...
Sumner	88.2	...	...	50.4	37.8	...
Trousdale	30.0	...	...	24.0	6.0	...
Williamson	142.0	...	21.0	73.6	47.3	...
Wilson	97.0	...	...	66.4	30.6	...
All counties	2461.3	...	257.3	1533.8	631.6	38.7

Table 7–*Area of timberland by forest type and ownership class, Central Tennessee Counties, 1989*

Forest type[1]	All ownerships	National forest	Other public	Forest industry	Forest industry-leased	Other private
	- - - - - - - -	- - - - - -	*Thousand acres*	- - - - - -	- - - - - -	- - - - - -
White-red-jack pine	4.9	...	...	4.9	...	...
Loblolly-shortleaf pine	174.2	...	5.6	...	...	168.6
Softwood total	179.1	...	5.6	4.9	...	168.6
Oak-pine	303.5	...	22.8	...	...	280.7
Oak-hickory	1940.5	...	94.4	16.5	...	1829.6
Oak-gum-cypress	38.3	...	5.2	...	...	33.1
Hardwood total	2282.2	...	122.3	16.5	...	2143.4
All types	2461.3	...	127.9	21.4	...	2312.1

[1] Forest type is based on species plurality of all live trees. Mixed types that in combination contain a majority of hardwood stocking are hardwood types.

Table 8–*Area of timberland by ownership and stocking classes of growing-stock trees, Central Tennessee Counties, 1989*

Ownership class	All classes	Stocking class (percent)				
		>130	100-130	60-100	16.7-60	<16.7
	Thousand acres					
Other public	127.9	...	5.9	73.9	42.5	5.6
Forest industry	21.4	...	...	21.4	...	...
Other private	2312.1	...	251.4	1438.5	589.1	33.1
All ownerships	2461.3	...	257.3	1533.8	631.6	38.7

Table 9–*Area of timberland by forest type and stand-size class, Central Tennessee Counties, 1989*

Forest type[1]	All classes	Stand-size class		
		Sawtimber	Poletimber	Sapling-seedling
	Thousand acres			
White-red-jack pine	4.9	4.9	...	...
Loblolly-shortleaf pine	174.2	22.2	82.4	69.6
Softwood total	179.1	27.1	82.4	69.6
Oak-pine	303.5	54.4	144.3	104.7
Oak-hickory	1940.5	860.6	700.1	379.8
Oak-gum-cypress	38.3	21.5	5.9	10.9
Hardwood total	2282.2	936.4	850.4	495.4
All types	2461.3	963.6	932.8	565.0

[1] Forest type is based on species plurality of all live trees. Mixed types that in combination contain a majority of hardwood stocking are hardwood types.

Table 10–*Number of live trees on timberland by species and diameter class, Central Tennessee Counties, 1989*

Species	All classes	Diameter class (inches at breast height) 1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Shortleaf-loblolly pine	3034	1324	...	495	821	269	89	...	36	...	...	...	...
Other yellow pines	2763	2332	...	130	219	38	...	28	16	...	...	...	...
Eastern white-red pine	1414	900	...	196	67	129	123	...	...	...	...	...	...
Other softwoods	210408	117329	53169	23539	10659	3566	1437	455	155	67	9	21	...
Total softwoods	217619	121885	53169	24360	11767	4003	1649	483	207	67	9	21	...
Select white oaks	65595	27820	14751	6670	5507	3499	2501	2105	1371	582	329	397	62
Select red oaks	10566	1581	2129	1225	1333	1206	981	785	521	489	145	157	14
Other white oaks	25000	6119	5006	3827	2902	2656	1359	1253	819	420	284	304	50
Other red oaks	31862	9056	4886	3788	3135	3432	2612	1896	1111	887	502	505	51
Hickory	117490	54005	24545	13412	10264	7189	3862	2527	953	461	123	124	26
Hard maple	102027	64582	15831	9281	4310	2786	2049	1703	586	495	205	141	57
Soft maple	38928	26192	4727	3121	2108	1237	553	340	243	145	88	138	36
Beech	30878	18458	5704	1447	1687	680	805	718	326	341	152	423	137
Sweetgum	20696	12586	2567	2309	1234	713	691	314	231	25	10	18	...
Tupelo-blackgum	45644	34800	4833	2970	1313	809	425	217	180	59	9	28	...
Ash	103160	64184	18176	9268	5293	2567	1618	917	565	267	183	109	15
Basswood	2551	1620	...	258	126	237	50	100	62	57	19	21	...
Yellow-poplar	44742	26111	5726	3619	2132	1755	1446	1456	970	711	361	421	34
Black walnut	11007	2676	1737	2860	1280	1156	570	378	191	48	75	36	...
Other hardwoods	403734	253273	81148	32150	17082	9501	4956	2942	1130	814	377	290	70
Total hardwoods	1053880	603065	191766	96206	59707	39424	24477	17651	9258	5801	2862	3111	552
Noncommercial	143938	104574	27383	8239	2728	469	200	263	68	...	...	14	...
All species	1415437	829524	272318	128806	74201	43896	26326	18397	9533	5868	2871	3146	552

Table 11—*Number of growing-stock trees on timberland by species and diameter class, Central Tennessee Counties, 1989*

		Diameter class (inches at breast height)										
Species	All classes	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Shortleaf-loblolly pine	3034	1324	...	495	821	269	89	...	36	...	...	...	...
Other yellow pines	2681	2332	...	130	137	38	...	28	16	...	...	...	...
Eastern white-red pine	1353	900	...	196	67	92	99	...	...	...	...	...	...
Other softwoods	165204	92950	40762	19443	8580	2192	896	216	93	56	9	8	...
Total softwoods	172272	97506	40762	20264	9605	2591	1084	243	145	56	9	8	...
Select white oaks	47064	14478	11474	6132	5234	3435	2253	1824	1130	493	311	285	16
Select red oaks	9278	1030	1653	1225	1265	1177	930	764	477	463	135	151	7
Other white oaks	18532	2640	3244	3479	2846	2493	1143	1171	704	361	234	181	37
Other red oaks	26467	4905	4886	3576	3032	3159	2457	1799	987	811	394	423	38
Hickory	85391	30371	20070	11151	9812	6827	3359	2270	870	426	123	95	16
Hard maple	54679	27856	10534	6548	3310	2458	1675	1176	501	337	156	98	28
Soft maple	17681	9960	2654	2083	1365	816	270	147	116	90	58	109	14
Beech	12205	4176	2462	1263	1454	622	733	617	254	280	93	218	34
Sweetgum	13924	7049	2090	1844	980	713	665	314	217	25	10	18	...
Tupelo-blackgum	14092	6574	2908	1832	1236	765	374	176	151	48	...	28	...
Ash	51677	25876	10798	5811	4029	2234	1241	753	455	228	163	81	8
Basswood	1331	479	...	258	126	159	50	100	62	57	19	21	...
Yellow-poplar	36094	18923	4724	3416	2132	1663	1446	1413	928	665	349	414	22
Black walnut	5894	545	545	1869	1016	936	494	270	124	12	65	18	...
Other hardwoods	145721	67702	30661	20922	12924	6855	3038	2082	691	403	259	172	13
Total hardwoods	540030	222564	108703	71409	50761	34311	20127	14875	7665	4700	2369	2313	232
All species	712303	320070	149465	91673	60366	36902	21211	15119	7810	4756	2379	2320	232

Table 12—*Volume of growing stock on timberland by species and diameter class, Central Tennessee Counties, 1989*

		Diameter class (inches at breast height)									
Species	All classes	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet										
Shortleaf-loblolly pine	12.1	1.2	5.8	3.1	1.4	...	0.7	...	...	...	...
Other yellow pines	2.5	0.3	0.7	0.4	...	0.7	0.4	...	...	...	...
Eastern white-red pine	3.1	0.5	0.3	0.9	1.4	...	...	...	...	...	...
Other softwoods	120.3	42.5	39.9	18.6	11.3	3.8	2.7	1.2	0.2	0.2	...
Total softwoods	138.1	44.5	46.7	23.0	14.0	4.5	3.8	1.2	0.2	0.2	...
Select white oaks	262.9	16.0	28.4	38.3	38.6	45.1	40.0	21.3	16.2	18.2	0.9
Select red oaks	111.5	2.3	9.3	12.5	16.2	19.8	14.9	19.3	6.0	10.3	1.0
Other white oaks	157.3	8.1	15.9	27.2	19.5	24.6	21.3	12.3	11.7	11.6	5.2
Other red oaks	269.9	9.8	20.1	35.2	42.3	44.7	31.3	31.8	20.2	29.8	4.7
Hickory	357.7	28.2	60.2	75.1	61.8	62.7	31.5	19.7	6.6	8.2	3.6
Hard maple	168.7	17.1	19.9	26.3	27.9	29.9	16.1	14.5	7.7	7.2	2.1
Soft maple	46.5	5.6	8.0	8.7	4.3	3.2	2.8	3.5	2.4	6.7	1.2
Beech	88.1	3.4	8.1	7.0	13.6	14.3	8.3	10.3	4.6	15.3	3.2
Sweetgum	52.0	4.1	6.0	8.2	12.6	8.8	8.4	1.5	0.5	1.8	...
Tupelo-blackgum	33.7	4.1	6.2	7.0	5.0	4.0	4.0	2.2	...	1.3	...
Ash	131.6	13.2	22.2	21.4	20.0	17.3	16.0	8.5	7.6	5.0	0.4
Basswood	15.1	0.9	0.6	1.4	1.4	2.3	2.1	3.0	1.2	2.2	...
Yellow-poplar	245.7	8.9	14.7	19.3	29.5	40.5	35.4	34.4	21.9	37.5	3.6
Black walnut	40.8	4.8	5.8	9.2	6.7	5.7	3.7	0.7	3.0	1.2	...
Other hardwoods	323.1	46.2	66.9	64.2	44.8	41.7	20.4	14.7	12.4	10.6	1.2
Total hardwoods	2304.7	172.7	292.2	361.2	344.2	364.6	256.2	197.6	122.0	166.9	27.1
All species	2442.7	217.2	338.9	384.2	358.3	369.1	260.0	198.8	122.2	167.0	27.1

Table 13–*Volume of growing stock in the saw-log portion of sawtimber*[1] *trees on timberland by species and diameter class, Central Tennessee Counties, 1989*

Species	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet								
Shortleaf-loblolly pine	4.3	2.4	1.2	...	0.6	...	...	...	...
Other yellow pines	1.5	0.3	...	0.7	0.4	...	...	...	...
Eastern white-red pine	2.1	0.8	1.3	...	...	...	...	...	...
Other softwoods	31.4	14.7	9.5	3.5	2.5	1.0	0.2	0.2	...
Total softwoods	39.2	18.2	12.0	4.2	3.5	1.0	0.2	0.2	...
Select white oaks	143.9	...	29.1	35.6	32.7	17.5	13.2	15.2	0.6
Select red oaks	70.1	...	11.7	15.9	12.1	16.0	5.0	8.5	0.9
Other white oaks	82.3	...	14.2	19.9	17.6	8.7	9.2	9.2	3.5
Other red oaks	165.0	...	30.5	36.5	25.7	26.4	17.2	24.7	4.1
Hickory	154.5	...	46.1	51.8	26.0	16.0	5.5	5.9	3.2
Hard maple	80.8	...	20.6	22.5	12.6	11.5	6.3	5.9	1.5
Soft maple	19.2	...	3.0	2.6	2.3	2.8	2.1	5.3	1.1
Beech	54.5	...	9.5	11.6	6.8	8.0	3.7	11.9	2.9
Sweetgum	25.9	...	8.1	7.4	7.0	1.4	0.4	1.7	...
Tupelo-blackgum	13.2	...	3.4	3.2	3.7	2.0	...	1.1	...
Ash	60.3	...	15.0	14.3	12.7	7.4	6.2	4.3	0.3
Basswood	10.0	...	1.1	1.7	1.8	2.6	1.0	1.8	...
Yellow-poplar	170.5	...	21.2	33.3	31.0	29.5	19.4	33.0	3.2
Black walnut	15.6	...	4.9	4.1	2.9	0.6	2.3	0.8	...
Other hardwoods	109.7	...	30.8	30.8	16.3	11.8	10.0	9.0	1.0
Total hardwoods	1175.5	...	248.9	291.0	211.1	162.1	101.7	138.4	22.4
All species	1214.7	18.2	260.9	295.2	214.5	163.1	101.8	138.5	22.4

[1] That part of the bole of sawtimber trees between a 1-foot stump and saw-log top.

Table 14–*Volume of sawtimber on timberland by species and diameter class, Central Tennessee Counties , 1989*

Species	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Shortleaf-loblolly pine	22.3	12.7	6.5	...	3.1	...	...	...	...
Other yellow pines	8.7	1.7	...	4.8	2.1	...	...	...	...
Eastern white-red pine	9.8	3.3	6.5	...	...	...	...	...	...
Other softwoods	156.4	71.9	46.6	17.7	13.9	4.9	0.7	0.5	...
Total softwoods	197.2	89.6	59.7	22.6	19.2	4.9	0.7	0.5	...
Select white oaks	856.4	...	159.7	206.1	196.9	109.1	84.1	96.3	4.2
Select red oaks	418.1	...	64.5	94.2	72.1	98.6	30.0	52.8	5.9
Other white oaks	497.3	...	79.6	113.6	107.3	54.4	59.7	59.9	22.8
Other red oaks	990.6	...	165.8	212.9	153.5	162.1	110.1	160.1	26.1
Hickory	947.6	...	265.6	317.5	165.4	101.2	35.9	40.7	21.3
Hard maple	499.9	...	118.4	136.6	79.1	75.8	41.9	39.6	8.4
Soft maple	114.0	...	15.9	14.9	14.0	16.9	13.9	33.6	4.7
Beech	328.5	...	51.0	67.0	41.0	49.4	24.1	77.1	18.8
Sweetgum	151.5	...	44.5	43.3	42.0	8.8	2.6	10.4	...
Tupelo-blackgum	75.7	...	17.5	18.0	21.8	12.6	...	5.7	...
Ash	364.2	...	83.6	85.4	81.5	45.3	40.6	26.4	1.4
Basswood	63.0	...	6.7	10.0	10.1	16.8	7.1	12.3	...
Yellow-poplar	1046.7	...	123.6	198.6	188.0	183.0	121.8	214.9	16.9
Black walnut	93.7	...	27.1	24.4	18.2	4.1	14.9	5.1	...
Other hardwoods	632.9	...	165.3	176.6	97.9	70.9	61.8	52.6	7.7
Total hardwoods	7080.0	...	1388.8	1719.2	1288.9	1009.0	648.5	887.3	138.3
All species	7277.2	89.6	1448.5	1741.8	1308.1	1013.9	649.2	887.9	138.3

Table 15–*Volume of growing stock and sawtimber on timberland by county and species group, Central Tennessee Counties, 1989*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Bedford	50.8	...	...	4.4	19.8	26.7	141.2	...	...	4.6	61.6	75.0
Cannon	92.2	...	4.5	4.6	29.1	54.0	243.6	...	2.2	7.1	66.5	167.9
Cheatam	145.8	...	0.4	4.8	27.7	112.9	440.0	...	1.9	12.1	85.2	340.9
Clay	88.6	...	0.7	2.7	12.1	73.1	212.9	...	4.8	3.9	23.2	181.0
Coffee	154.3	...	...	...	28.4	125.9	486.6	...	...	...	81.2	405.4
Davidson	114.4	...	0.5	3.9	8.8	101.2	380.7	...	...	6.2	22.8	351.7
De Kalb	166.8	...	...	13.6	57.9	95.4	523.5	...	...	21.9	238.1	263.5
Dickson	216.8	...	...	1.2	32.6	183.0	738.3	...	...	...	110.5	627.8
Giles	151.4	3.1	0.1	1.9	52.5	93.7	347.8	9.8	...	3.9	103.8	230.3
Jackson	166.6	...	1.2	9.0	51.2	105.1	583.8	...	3.9	15.8	185.4	378.8
Lincoln	114.2	...	...	9.7	31.5	73.0	276.6	...	...	5.1	60.1	211.4
Macon	105.2	...	...	0.3	53.6	51.3	378.0	...	...	...	194.0	184.1
Marshall	51.7	...	...	5.9	10.1	35.6	153.6	...	...	6.9	25.4	121.3
Maury	108.3	...	...	0.5	35.5	72.3	241.8	...	...	...	75.5	166.4
Montgomery	143.0	...	5.5	2.8	48.3	86.3	404.4	...	14.9	3.8	130.2	255.4
Moore	55.3	...	...	2.7	9.6	43.0	192.6	...	...	7.1	27.6	157.8
Robertson	66.3	...	...	0.4	24.3	41.6	262.5	...	...	1.8	87.5	173.2
Rutherford	52.3	...	...	11.7	7.6	33.0	95.2	...	...	6.1	14.8	74.2
Smith	79.1	...	...	4.2	20.5	54.5	202.7	...	...	1.4	64.0	137.4
Sumner	79.3	...	...	3.6	30.7	45.0	275.4	...	...	4.3	120.5	150.6
Trousdale	25.3	...	...	4.8	7.8	12.8	49.8	...	...	0.5	18.2	31.1
Williamson	163.7	...	1.6	13.0	53.0	96.2	545.3	...	3.3	20.1	201.1	320.8
Wilson	51.4	...	...	14.7	5.7	31.0	100.7	...	...	23.8	12.3	64.6
All counties	2442.7	3.1	14.6	120.3	658.2	1646.5	7277.2	9.8	31.0	156.4	2009.5	5070.5

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 16–*Volume of timber on timberland by class of timber and species group, Central Tennessee Counties, 1989*

		Softwood			Hardwood	
		Pine				
Class of timber	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet					
Sawtimber trees:						
Saw-log portion	1214.7	2.1	5.7	31.4	336.0	839.6
Upper-stem portion	310.8	0.3	0.9	6.5	81.2	221.9
Total	1525.5	2.3	6.6	37.9	417.2	1061.4
Poletimber trees	917.3	0.8	7.9	82.5	241.0	585.1
All growing-stock trees	2442.7	3.1	14.6	120.3	658.2	1646.5
Rough trees:						
Sawtimber size	149.0	0.4	...	14.3	42.5	91.8
Poletimber size	146.4	...	0.2	12.4	39.9	93.9
Total	295.5	0.4	0.2	26.7	82.4	185.7
Rotten trees:						
Sawtimber size	72.3	...	...	0.9	17.5	53.9
Poletimber size	8.1	...	...	0.1	2.0	5.9
Total	80.4	...	...	1.0	19.5	59.8
Salvable dead trees:						
Sawtimber size	8.5	...	...	0.3	2.6	5.5
Poletimber size	13.0	...	0.4	0.9	1.3	10.4
Total	21.5	...	0.4	1.2	4.0	15.9
All classes	2840.1	3.6	15.2	149.3	764.1	1908.0

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 17–*Volume of live trees and growing stock on timberland by ownership group and species group, Central Tennessee Counties, 1989*

	Live trees						Growing stock					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet											
Other public	151.8	...	5.5	5.8	49.4	91.1	130.0	...	5.5	4.5	39.3	80.7
Forest industry	38.6	3.6	...	0.4	15.7	19.0	34.2	3.1	...	0.4	13.5	17.2
Other private	2628.2	...	9.3	141.9	695.1	1781.9	2278.5	...	9.1	115.5	605.4	1548.6
All ownerships	2818.6	3.6	14.8	148.1	760.1	1892.0	2442.7	3.1	14.6	120.3	658.2	1646.5

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 18–*Average net annual growth of growing stock and sawtimber on timberland by county and species group, Central Tennessee Counties, 1989*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Bedford	1.5	...	...	0.3	0.7	0.5	4.2	...	...	0.2	2.0	2.0
Cannon	4.6	...	0.3	0.2	1.8	2.3	14.0	...	0.3	0.6	5.7	7.4
Cheatam	7.8	...	...	0.3	1.8	5.7	28.8	...	...	1.0	6.1	21.7
Clay	4.6	...	...	0.1	0.9	3.6	15.8	...	-0.2	0.1	2.5	13.4
Coffee	4.8	...	...	...	1.3	3.6	19.3	...	...	...	3.8	15.5
Davidson	4.2	...	0.1	0.2	0.5	3.4	11.2	...	...	0.7	0.9	9.5
De Kalb	7.5	...	...	0.6	2.9	4.0	27.7	...	...	1.4	14.0	12.4
Dickson	7.8	...	...	0.1	1.6	6.1	42.0	...	...	...	6.5	35.5
Giles	8.7	0.4	...	...	3.3	5.0	23.4	1.2	0.1	0.2	8.4	13.5
Jackson	5.9	...	0.1	0.2	2.1	3.6	23.5	...	0.3	0.6	7.8	14.8
Lincoln	4.3	...	...	0.2	1.6	2.5	14.2	...	...	0.4	3.3	10.4
Macon	4.3	...	...	...	2.7	1.6	22.3	...	...	...	13.3	8.9
Marshall	1.1	...	...	0.4	0.3	0.5	2.9	...	...	0.7	0.7	1.5
Maury	3.1	...	...	...	1.2	1.9	8.8	...	...	...	4.2	4.6
Montgomery	7.8	...	0.4	0.1	2.8	4.5	27.6	...	0.7	0.2	10.2	16.5
Moore	1.5	...	...	...	0.5	1.0	4.7	...	...	-0.3	1.3	3.7
Robertson	3.5	...	...	...	1.5	2.0	17.2	...	...	...	6.8	10.3
Rutherford	2.6	...	...	0.8	0.4	1.4	6.6	...	...	0.7	1.0	4.9
Smith	4.0	...	...	0.4	1.1	2.5	15.3	...	...	0.2	4.9	10.2
Sumner	3.2	...	...	0.2	1.4	1.6	15.4	...	...	0.5	5.8	9.2
Trousdale	0.8	...	...	0.4	...	0.4	2.2	...	...	...	0.4	1.7
Williamson	6.5	...	0.1	0.6	2.2	3.6	25.8	...	0.4	1.0	10.2	14.3
Wilson	1.9	...	...	0.4	0.2	1.2	6.6	...	...	1.5	1.3	3.8
All counties	102.0	0.4	0.9	5.6	32.6	62.5	379.3	1.2	1.4	9.7	121.3	245.7

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 19–*Average net annual removals of growing stock and sawtimber on timberland by county and species group, Central Tennessee Counties, 1989*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Bedford	0.4	...	...	0.1	0.1	0.3	1.2	...	...	...	0.4	0.7
Cannon	1.5	...	...	...	1.1	0.5	6.8	...	...	...	5.0	1.8
Cheatam	2.1	...	...	...	0.2	1.8	7.6	...	0.2	...	0.6	6.8
Clay	2.3	...	...	...	0.1	2.2	9.9	...	...	...	0.6	9.3
Coffee	2.5	...	...	...	0.4	2.1	11.5	...	...	...	1.7	9.8
Davidson	2.3	...	...	0.1	0.2	2.0	9.6	...	...	0.3	0.3	8.9
De Kalb	0.3	...	...	...	0.2	0.2	2.1	...	...	...	1.1	1.0
Dickson	1.5	...	...	...	0.2	1.4	6.8	...	...	...	0.8	6.0
Giles	3.1	...	0.1	...	1.0	2.0	10.9	...	0.3	...	3.3	7.2
Jackson	0.7	...	...	...	...	0.7	4.0	...	...	...	...	4.0
Lincoln	0.7	...	...	0.2	0.2	0.3	2.0	...	...	0.2	0.6	1.3
Macon	0.4	...	...	...	0.1	0.3	1.3	...	...	...	0.6	0.7
Marshall	1.1	...	...	0.2	0.2	0.6	4.5	...	...	0.3	0.8	3.4
Maury	2.4	...	...	...	0.7	1.7	10.0	...	...	...	2.3	7.7
Montgomery	1.5	...	...	...	0.1	1.4	7.1	...	...	...	0.4	6.7
Moore	...	...	...	...	...	...	...	...	...	...	...	...
Robertson	2.0	...	...	...	0.1	1.8	9.0	...	...	...	0.4	8.6
Rutherford	0.3	...	...	...	...	0.2	0.7	...	...	...	...	0.7
Smith	0.9	...	...	...	...	0.8	2.1	...	...	...	...	2.1
Sumner	1.7	...	...	...	0.7	1.0	5.5	...	...	...	1.3	4.2
Trousdale	0.1	...	...	...	0.1	0.1	0.4	...	...	...	0.4	...
Williamson	1.0	...	...	0.1	0.2	0.7	3.2	...	...	0.6	0.3	2.2
Wilson	1.5	...	...	0.3	0.6	0.6	5.7	...	...	0.7	2.6	2.4
All counties	30.2	...	0.1	0.9	6.5	22.7	121.9	...	0.5	2.1	23.8	95.5

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 20–*Average net annual growth and average annual removals of growing stock on timberland by species, Central Tennessee Counties, 1989*

Species	Growth	Removals
	Million cubic feet	
Yellow pines	0.9	0.1
Eastern white-red pines	0.4	...
Other softwoods	5.6	0.9
Total softwoods	6.9	1.1
Select white-red oaks	14.0	6.6
Other white-red oaks	14.6	8.2
Hickory	10.9	3.3
Hard maple	8.3	0.9
Sweetgum	3.0	0.5
Ash-walnut-black cherry	8.9	2.0
Yellow-poplar	13.6	2.9
Other hardwoods	21.9	4.8
Total hardwoods	95.1	29.2
All species	102.0	30.2

Table 21–*Average net annual growth and average annual removals of sawtimber on timberland by species, Central Tennessee Counties, 1989*

Species	Growth	Removals
	Million board feet	
Yellow pines	1.4	0.5
Eastern white-red pines	1.2	...
Other softwoods	9.7	2.1
Total softwoods	12.3	2.6
Select white-red oaks	59.3	31.0
Other white-red oaks	61.5	38.0
Hickory	40.5	9.9
Hard maple	29.4	3.8
Sweetgum	11.0	2.0
Ash-walnut-black cherry	31.4	7.1
Yellow-poplar	65.6	14.2
Other hardwoods	68.3	13.3
Total hardwoods	367.0	119.3
All species	379.3	121.9

Table 22–*Average annual mortality of growing stock and sawtimber on timberland by species, Central Tennessee Counties, 1989*

Species	Growing stock	Sawtimber
	Million cubic feet	*Million board feet*
Yellow pines	0.1	...
Other softwoods	0.4	0.1
Total softwoods	0.5	0.1
Select white-red oaks	2.7	6.5
Other white-red oaks	4.6	10.9
Hickory	4.0	6.6
Hard maple	0.5	1.0
Sweetgum	0.3	0.2
Ash-walnut-black cherry	1.0	1.4
Yellow-poplar	0.6	1.6
Other hardwoods	5.7	7.1
Total hardwoods	19.3	35.4
All species	19.8	35.5

Table 23–*Average net annual growth and average annual removals of growing stock on timberland by ownership class and species group, Central Tennessee Counties, 1989*

	Growth						Removals					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet											
Other public	5.3	...	0.4	0.1	1.9	3.0	...	...	...	...	...	...
Forest industry	1.5	0.4	...	...	0.5	0.6	...	...	...	...	...	...
Other private	95.2	...	0.6	5.5	30.2	59.0	30.2	...	0.1	0.9	6.5	22.7
All ownerships	102.0	0.4	0.9	5.6	32.6	62.5	30.2	...	0.1	0.9	6.5	22.7

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 24–*Average net annual growth and average annual removals of sawtimber on timberland by ownership class and species group, Central Tennessee Counties, 1989*

	Growth						Removals					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million board feet											
Other public	21.2	...	0.7	0.7	7.6	12.2	...	...	...	...	...	...
Forest industry	5.0	1.2	...	...	1.9	1.9	...	...	...	...	...	...
Other private	353.1	...	0.8	9.0	111.8	231.5	121.9	...	0.5	2.1	23.8	95.5
All ownerships	379.3	1.2	1.4	9.7	121.3	245.7	121.9	...	0.5	2.1	23.8	95.5

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 25–*Volume of sawtimber on timberland by species and tree grade, Central Tennssee Counties, 1989*

Species	All grades	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
	Million board feet					
Yellow pines	31.0	...	5.2	20.9	...	4.8
Redcedar	156.4	142.4	...	...	...	14.0
Other softwoods	9.8	...	4.8	4.7	...	0.4
Total softwoods	197.2	142.4	10.0	25.6	...	19.2
Select white-red oaks	1274.5	130.0	328.2	570.8	187.1	58.3
Other white-red oaks	1487.9	121.9	345.7	687.3	242.8	90.1
Hickory	947.6	29.5	218.1	451.9	211.7	36.4
Hard maple	499.9	3.4	58.5	229.7	167.9	40.4
Sweetgum	151.5	20.3	15.0	79.5	25.4	11.1
Tupelo and blackgum	75.7	15.8	10.9	26.2	15.1	7.7
Ash-walnut-black cherry	510.3	65.7	142.1	208.9	42.3	51.3
Yellow-poplar	1046.7	123.6	215.1	406.6	261.1	40.2
Other hardwoods	1085.9	46.7	154.0	348.2	394.7	142.3
Total hardwoods	7080.0	557.0	1487.8	3009.2	1548.1	477.9
All species	7277.2	699.4	1497.7	3034.8	1548.1	497.1

Supplemental Tables 26-40

Table 26–*Area of timberland by stand age, forest type group and type of regeneration, Central Tennessee Counties, 1989*

Stand age class	Pine		Oak-pine		Other hardwood types	
	Artificial	Natural	Artificial	Natural	Artificial	Natural
	Thousand acres					
1-10	...	13.5	...	4.9	...	46.2
11-20	...	5.6	...	...	...	5.2
21-30	...	4.9	...	...	...	...
31-40	...	...	...	...	...	...
41-50	...	...	...	...	...	...
>50	...	...	...	...	...	...
Mixed	4.9	150.2	...	298.6	...	1927.4
Total	4.9	174.2	...	303.5	...	1978.7

Table 27–*Volume of softwood growing stock on timberland by forest type, Central Tennessee Counties, 1989*

County	Total	Forest type group					
		White-red-jack pine	Loblolly-shortleaf pine		Oak-pine	Oak-hickory	Oak-gum cypress
			Planted	Natural			
	Million cubic feet						
Bedford	4.4	...	...	3.5	0.5	...	0.4
Cannon	9.1	...	...	2.8	5.5	0.8	...
Cheatam	5.2	...	...	...	...	5.2	...
Clay	3.4	...	...	...	1.2	2.3	...
Coffee	...	...	...	...	...	...	...
Davidson	4.4	...	...	...	1.3	3.1	...
De Kalb	13.6	...	...	5.3	8.0	0.3	...
Dickson	1.2	...	...	...	1.2	...	...
Giles	5.1	3.5	...	0.2	...	1.4	...
Jackson	10.2	...	...	...	9.1	1.1	...
Lincoln	9.7	...	...	7.1	1.1	1.6	...
Macon	0.3	...	...	...	...	0.3	...
Marshall	5.9	...	...	2.4	1.5	2.0	...
Maury	0.5	...	...	0.3	...	0.2	...
Montgomery	8.4	...	...	...	4.8	3.6	...
Moore	2.7	...	...	...	...	2.7	...
Robertson	0.4	...	...	...	...	0.4	...
Rutherford	11.7	...	...	7.3	3.8	0.7	...
Smith	4.2	...	...	...	1.4	2.8	...
Sumner	3.6	...	...	3.6	...	...	...
Trousdale	4.8	...	...	...	3.1	1.7	...
Williamson	14.6	...	...	6.4	6.0	2.2	...
Wilson	14.7	...	...	3.2	10.4	1.0	...
All counties	138.1	3.5	...	42.1	58.7	33.4	0.4

Table 28–*Volume of hardwood growing stock on timberland by forest type, Central Tennessee, Counties, 1989*

		Forest type group					
			Loblolly-shortleaf pine				
County	Total	White-red-jack pine	Planted	Natural	Oak-pine	Oak-hickory	Oak-gum-cypress
	Million cubic feet						
Bedford	46.4	...	...	1.9	0.2	39.1	5.2
Cannon	83.1	...	...	2.0	9.1	72.0	...
Cheatam	140.5	...	...	...	...	140.5	...
Clay	85.2	...	...	...	2.7	82.5	...
Coffee	154.3	...	...	...	...	147.1	7.3
Davidson	110.0	...	...	...	4.1	105.9	...
De Kalb	153.2	...	...	1.6	10.8	124.3	16.5
Dickson	215.6	...	...	...	3.6	212.1	...
Giles	146.3	2.6	...	...	...	141.5	2.2
Jackson	156.4	...	...	...	11.1	145.2	...
Lincoln	104.4	...	...	4.1	3.7	88.5	8.1
Macon	104.9	...	...	...	...	104.9	...
Marshall	45.7	...	...	1.3	6.8	37.6	...
Maury	107.8	...	...	...	1.5	106.3	...
Montgomery	134.6	...	...	...	8.4	126.3	...
Moore	52.6	...	...	...	...	52.6	..
Robertson	65.9	...	...	...	...	65.9	...
Rutherford	40.6	...	...	3.4	11.8	25.4	...
Smith	74.9	...	...	...	3.2	71.7	...
Sumner	75.8	...	...	1.1	...	74.6	...
Trousdale	20.6	...	...	...	4.1	16.5	...
Williamson	149.1	...	...	1.6	6.8	132.7	8.0
Wilson	36.7	...	...	1.4	19.1	16.2	...
All counties	2304.7	2.6	...	18.3	106.9	2129.6	47.4

Table 29–*Volume of softwood growing stock in the saw-log portion of sawtimber trees on timberland by forest type, Central Tennessee Counties, 1989*

County	Total	Forest type group				
			Loblolly-shortleaf pine			
		White-red-jack pine	Planted	Natural	Oak-pine	Oak hickory
	Million cubic feet					
Bedford	0.9	...	...	0.5	0.4	...
Cannon	1.9	...	...	1.0	0.8	...
Cheatam	2.6	...	...	...	...	2.6
Clay	1.4	...	...	...	...	1.4
Coffee	...	...	...	...	...	...
Davidson	1.4	...	...	...	0.3	1.0
De Kalb	4.5	...	...	2.2	2.3	...
Dickson	...	...	...	...	...	...
Giles	2.8	2.1	...	...	...	0.8
Jackson	3.9	...	...	...	3.4	0.5
Lincoln	1.0	...	...	1.0	...	...
Macon	...	...	...	...	...	...
Marshall	1.4	...	...	0.9	0.2	0.2
Maury	...	...	...	...	...	...
Montgomery	3.6	...	...	...	1.9	1.6
Moore	1.3	...	...	...	...	1.3
Robertson	0.4	...	...	...	...	0.4
Rutherford	1.2	...	...	0.5	0.6	0.1
Smith	0.3	...	...	...	...	0.3
Sumner	0.9	...	...	0.9	...	...
Trousdale	0.3	...	...	...	0.3	...
Williamson	5.0	...	...	2.0	1.8	1.2
Wilson	4.6	...	...	0.2	4.4	...
All counties	39.2	2.1	...	9.3	16.4	11.5

Table 30–*Volume of hardwood growing stock in the saw-log portion of sawtimber trees on timberland by forest type, Central Tennessee Counties, 1989*

County	Total	Forest type group					
			Loblolly-shortleaf pine				
		White-red-jack pine	Planted	Natural	Oak-pine	Oak-hickory	Oak-gum cypress
	Million cubic feet						
Bedford	23.3	...	...	1.4	...	18.3	3.7
Cannon	39.4	...	...	0.7	1.1	37.6	...
Cheatam	72.6	...	...	...	...	72.6	...
Clay	34.6	...	...	...	1.3	33.3	...
Coffee	80.4	...	...	...	...	75.9	4.4
Davidson	58.3	...	...	...	...	58.3	...
De Kalb	82.3	...	...	...	1.2	69.0	12.0
Dickson	126.7	...	...	...	1.5	125.2	...
Giles	54.8	1.1	...	...	...	52.6	1.2
Jackson	90.2	...	...	...	5.5	84.7	...
Lincoln	46.0	...	...	1.3	0.7	42.6	1.4
Macon	64.0	...	...	...	...	64.0	...
Marshall	25.4	...	...	0.5	3.2	21.7	...
Maury	41.3	...	...	...	0.3	41.0	...
Montgomery	62.6	...	...	...	4.6	58.0	...
Moore	29.1	...	...	...	...	29.1	...
Robertson	43.5	...	...	...	...	43.5	...
Rutherford	15.6	...	...	0.6	4.4	10.5	...
Smith	32.7	...	...	...	0.9	31.8	...
Sumner	45.2	...	...	0.5	...	44.8	...
Trousdale	8.4	...	...	...	1.4	7.0	...
Williamson	86.0	...	...	0.3	2.0	77.7	6.0
Wilson	13.2	...	...	0.4	5.3	7.4	...
All counties	1175.5	1.1	...	5.6	33.5	1106.6	28.8

Table 31–*Volume of timber on timberland by county, class of timber and species group, Central Tennessee Counties, 1989*

County	All classes	Growing stock		Rough		Rotten	
		Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
	Million cubic feet						
Bedford	68.7	4.4	46.4	2.9	12.2	...	2.8
Cannon	106.8	9.1	83.1	0.7	12.1	...	1.8
Cheatam	159.9	5.2	140.5	...	8.8	...	5.4
Clay	96.2	3.4	85.2	...	5.1	...	2.5
Coffee	175.2	...	154.3	...	11.3	...	9.6
Davidson	137.2	4.4	110.0	1.4	12.8	0.3	8.4
De Kalb	180.2	13.6	153.2	0.8	8.8	...	3.8
Dickson	227.9	1.2	215.6	...	9.2	...	1.8
Giles	177.8	5.1	146.3	0.7	17.5	...	8.3
Jackson	190.4	10.2	156.4	1.3	17.5	0.2	4.8
Lincoln	133.9	9.7	104.4	1.0	13.9	...	4.8
Macon	112.2	0.3	104.9	...	5.3	...	1.6
Marshall	64.4	5.9	45.7	1.5	9.4	...	1.9
Maury	126.5	0.5	107.8	0.4	16.5	...	1.3
Montgomery	166.2	8.4	134.6	0.3	19.5	...	3.4
Moore	60.6	2.7	52.6	0.7	3.3	...	1.3
Robertson	74.4	0.4	65.9	...	7.2	...	0.9
Rutherford	82.7	11.7	40.6	7.5	20.0	0.2	2.7
Smith	97.2	4.2	74.9	0.7	14.7	...	2.7
Sumner	93.8	3.6	75.8	1.0	12.0	...	1.5
Trousdale	29.7	4.8	20.6	0.3	3.9	...	0.2
Williamson	189.7	14.6	149.1	1.7	17.6	0.3	6.5
Wilson	67.0	14.7	36.7	4.5	9.7	...	1.3
All counties	2818.6	138.1	2304.7	27.4	268.1	1.0	79.4

Table 32–*Number of live trees on timberland by detailed species and diameter class, Central Tennessee Counties, 1989*

		Diameter class (inches at breast height)										
Species	All classes	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Shortleaf pine	671	583	...	71	...	...	...	...	17	...	...	...	...
Loblolly pine	2363	741	...	424	821	269	89	...	19	...	...	...	...
Virginia pine	2763	2332	...	130	219	38	...	28	16	...	...	...	...
E. white pine	1414	900	...	196	67	129	123	...	...	...	...	...	...
Redcedar	210408	117329	53169	23539	10659	3566	1437	455	155	67	9	21	...
Total softwoods	217619	121885	53169	24360	11767	4003	1649	483	207	67	9	21	...
Select white oaks	65595	27820	14751	6670	5507	3499	2501	2105	1371	582	329	397	62
Select red oaks	10566	1581	2129	1225	1333	1206	981	785	521	489	145	157	14
Other white oaks	25000	6119	5006	3827	2902	2656	1359	1253	819	420	284	304	50
Other red oaks	31862	9056	4886	3788	3135	3432	2612	1896	1111	887	502	505	51
Other hickories	117490	54005	24545	13412	10264	7189	3862	2527	953	461	123	124	26
Persimmon	13562	9328	1604	1716	549	182	154	...	31	...	...	...	...
Hard maple	102027	64582	15831	9281	4310	2786	2049	1703	586	495	205	141	57
Soft maple	31444	22730	3612	2243	1089	820	277	150	185	101	88	113	36
Boxelder	7484	3461	1115	879	1019	417	276	191	57	44	...	25	...
Beech	30878	18458	5704	1447	1687	680	805	718	326	341	152	423	137
Sweetgum	20696	12586	2567	2309	1234	713	691	314	231	25	10	18	...
Blackgum	45644	34800	4833	2970	1313	809	425	217	180	59	9	28	...
White ash	81790	54658	12803	6268	3620	1815	1072	741	408	184	128	77	15
Other ashes	21371	9526	5373	3000	1673	752	545	175	158	83	55	31	...
Sycamore	1883	479	...	355	258	232	135	170	33	51	98	68	4
Basswood	2551	1620	...	258	126	237	50	100	62	57	19	21	...
Yellow-poplar	44742	26111	5726	3619	2132	1755	1446	1456	970	711	361	421	34
Magnolia	72	...	...	...	72	...	...	...	...	...	...	...	...
Black walnut	11007	2676	1737	2860	1280	1156	570	378	191	48	75	36	...
Black cherry	12559	9333	1102	636	547	347	247	174	73	83	...	17	...
American elm	34513	22607	6130	2565	1243	877	530	332	32	97	42	33	23
Other elms	77863	45984	20054	7069	2552	1375	470	146	115	61	9	25	...
River birch	24	...	...	...	...	...	...	...	13	10	...	...	...
Other birches	1438	1438	...	...	...	...	...	...	...	...	...	...	...
Hackberry	71479	44060	11308	5975	4695	1995	1545	939	441	297	96	89	40
Black locust	12447	2663	2484	2418	2588	1134	483	390	128	85	61	16	...
Other locusts	7371	3818	1888	737	367	363	174	24	...	...	...	...	...
Sassafras	40769	19835	10003	4316	2818	2010	910	487	224	86	72	7	...
Dogwood	100378	79310	17908	2858	302	...	...	...	...	...	...	...	...
Holly	156	...	...	93	63	...	...	...	...	...	...	...	...
Other commercial	29221	14420	8667	3413	1028	986	309	280	39	43	...	34	3
Total hardwoods	1053880	603065	191766	96206	59707	39424	24477	17651	9258	5801	2862	3111	552
Noncommercial	143938	104574	27383	8239	2728	469	200	263	68	...	...	14	...
All species	1415437	829524	272318	128806	74201	43896	26326	18397	9533	5868	2871	3146	552

Table 33—*Number of growing-stock trees on timberland by detailed species and diameter class, Central Tennessee Counties, 1989*

Species	All classes	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees										
Shortleaf pine	88	71	...	...	...	...	17	...	...	...	...
Loblolly pine	1622	424	821	269	89	...	19	...	...	...	...
Virginia pine	349	130	137	38	...	28	16	...	...	...	...
E. white pine	453	196	67	92	99	...	...	...	...	...	...
Redcedar	31493	19443	8580	2192	896	216	93	56	9	8	...
Total softwoods	34005	20264	9605	2591	1084	243	145	56	9	8	...
Select white oaks	21112	6132	5234	3435	2253	1824	1130	493	311	285	16
Select red oaks	6595	1225	1265	1177	930	764	477	463	135	151	7
Other white oaks	12648	3479	2846	2493	1143	1171	704	361	234	181	37
Other red oaks	16677	3576	3032	3159	2457	1799	987	811	394	423	38
Other hickories	34949	11151	9812	6827	3359	2270	870	426	123	95	16
Persimmon	2477	1716	445	182	119	...	15	...	...	...	...
Hard maple	16289	6548	3310	2458	1675	1176	501	337	156	98	28
Soft maple	3746	1661	936	621	106	80	116	63	58	92	14
Boxelder	1321	422	430	195	163	67	...	26	...	17	...
Beech	5567	1263	1454	622	733	617	254	280	93	218	34
Sweetgum	4785	1844	980	713	665	314	217	25	10	18	...
Blackgum	4610	1832	1236	765	374	176	151	48	...	28	...
White ash	10025	3621	2729	1613	779	620	331	157	109	57	8
Other ashes	4977	2190	1300	621	461	133	123	71	55	23	...
Sycamore	1104	355	133	198	87	104	33	40	87	68	...
Basswood	852	258	126	159	50	100	62	57	19	21	...
Yellow-poplar	12447	3416	2132	1663	1446	1413	928	665	349	414	22
Magnolia	72	...	72	...	...	...	...	...	...	...	...
Black walnut	4804	1869	1016	936	494	270	124	12	65	18	...
Black cherry	1627	636	217	347	113	174	58	83	...	...	...
American elm	3868	1479	1020	686	296	251	32	39	32	20	13
Other elms	9772	5947	2119	1146	296	126	86	27	9	16	...
River birch	10	...	...	...	...	...	...	10	...	...	...
Hackberry	10599	3528	3685	1468	953	626	185	62	50	43	...
Black locust	5085	1826	2063	635	176	254	53	52	19	8	...
Other locusts	1193	562	238	282	87	24	...	...	...	...	...
Sassafras	9073	3657	2317	1616	713	416	210	75	61	7	...
Dogwood	560	328	233	...	...	...	...	...	...	...	...
Other commercial	1917	890	382	296	198	107	19	15	...	10	...
Total hardwoods	208763	71409	50761	34311	20127	14875	7665	4700	2369	2313	232
All species	242768	91673	60366	36902	21211	15119	7810	4756	2379	2320	232

Table 34–*Volume of growing-stock trees on timberland by detailed species and diameter class, Central Tennessee Counties, 1989*

		Diameter class (inches at breast height)									
Species	All classes	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet										
Shortleaf pine	0.5	0.1	...	...	...	...	0.4	...	...	...	...
Loblolly pine	11.6	1.1	5.8	3.1	1.4	...	0.3	...	...	...	...
Virginia pine	2.5	0.3	0.7	0.4	...	0.7	0.4	...	...	...	...
E. white pine	3.1	0.5	0.3	0.9	1.4	...	...	...	...	...	...
Redcedar	120.3	42.5	39.9	18.6	11.3	3.8	2.7	1.2	0.2	0.2	...
Total softwoods	138.1	44.5	46.7	23.0	14.0	4.5	3.8	1.2	0.2	0.2	...
Select white oaks	262.9	16.0	28.4	38.3	38.6	45.1	40.0	21.3	16.2	18.2	0.9
Select red oaks	111.5	2.3	9.3	12.5	16.2	19.8	14.9	19.3	6.0	10.3	1.0
Other white oaks	157.3	8.1	15.9	27.2	19.5	24.6	21.3	12.3	11.7	11.6	5.2
Other red oaks	269.9	9.8	20.1	35.2	42.3	44.7	31.3	31.8	20.2	29.8	4.7
Other hickories	357.7	28.2	60.2	75.1	61.8	62.7	31.5	19.7	6.6	8.2	3.6
Persimmon	10.8	3.5	2.8	1.9	2.0	...	0.5	...	...	...	...
Hard maple	168.7	17.1	19.9	26.3	27.9	29.9	16.1	14.5	7.7	7.2	2.1
Soft maple	34.8	4.4	5.6	6.6	1.9	1.8	2.8	2.4	2.4	5.5	1.2
Boxelder	11.8	1.2	2.3	2.1	2.4	1.4	...	1.0	...	1.2	...
Beech	88.1	3.4	8.1	7.0	13.6	14.3	8.3	10.3	4.6	15.3	3.2
Sweetgum	52.0	4.1	6.0	8.2	12.6	8.8	8.4	1.5	0.5	1.8	...
Blackgum	33.7	4.1	6.2	7.0	5.0	4.0	4.0	2.2	...	1.3	...
White ash	91.1	8.3	15.6	14.9	12.0	14.5	11.2	6.0	4.7	3.5	0.4
Other ashes	40.5	4.9	6.7	6.5	8.0	2.9	4.7	2.5	2.9	1.5	...
Sycamore	19.0	1.2	0.8	1.5	1.2	2.2	1.2	1.7	4.4	4.8	...
Basswood	15.1	0.9	0.6	1.4	1.4	2.3	2.1	3.0	1.2	2.2	...
Yellow-poplar	245.7	8.9	14.7	19.3	29.5	40.5	35.4	34.4	21.9	37.5	3.6
Magnolia	0.8	...	0.8	...	...	...	...	...	...	...	...
Black walnut	40.8	4.8	5.8	9.2	6.7	5.7	3.7	0.7	3.0	1.2	...
Black cherry	18.0	2.0	1.1	4.0	1.6	4.2	2.0	3.0	...	...	...
American elm	29.9	3.2	5.0	6.2	4.0	5.1	1.0	1.5	1.4	1.2	1.2
Other elms	44.2	11.9	10.2	10.2	4.4	2.7	2.4	1.2	0.5	0.6	...
River birch	0.3	...	...	...	...	...	...	0.3	...	...	...
Hackberry	75.7	7.7	17.2	13.0	13.7	11.9	5.2	2.1	2.6	2.3	...
Black locust	34.3	4.4	11.6	6.5	2.7	4.9	1.5	1.6	0.7	0.5	...
Other locusts	7.3	1.1	1.2	3.1	1.3	0.5	...	...	...	...	...
Sassafras	69.9	9.3	14.0	15.5	11.1	8.3	6.0	2.4	2.8	0.5	...
Dogwood	0.9	0.5	0.4	...	...	...	...	...	...	...	...
Other commercial	12.0	1.3	1.7	2.3	2.8	1.9	0.5	0.8	...	0.8	...
Total hardwoods	2304.7	172.7	292.2	361.2	344.2	364.6	256.2	197.6	122.0	166.9	27.1
All species	2442.7	217.2	338.9	384.2	358.3	369.1	260.0	198.8	122.2	167.0	27.1

Table 35–*Volume of growing stock in the saw-log portion of sawtimber trees on timberland by detailed species and diameter class, Central Tennessee Counties, 1989*

		Diameter class (inches at breast height)							
Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet								
Shortleaf pine	0.4	...	...	...	0.4	...	...	...	...
Loblolly pine	3.9	2.4	1.2	...	0.2	...	...	...	...
Virginia pine	1.5	0.3	...	0.7	0.4	...	...	...	...
E. white pine	2.1	0.8	1.3	...	...	...	...	...	...
Redcedar	31.4	14.7	9.5	3.5	2.5	1.0	0.2	0.2	...
Total softwoods	39.2	18.2	12.0	4.2	3.5	1.0	0.2	0.2	...
Select white oaks	143.9	...	29.1	35.6	32.7	17.5	13.2	15.2	0.6
Select red oaks	70.1	...	11.7	15.9	12.1	16.0	5.0	8.5	0.9
Other white oaks	82.3	...	14.2	19.9	17.6	8.7	9.2	9.2	3.5
Other red oaks	165.0	...	30.5	36.5	25.7	26.4	17.2	24.7	4.1
Other hickories	154.5	...	46.1	51.8	26.0	16.0	5.5	5.9	3.2
Persimmon	1.9	...	1.5	...	0.4	...	...	...	...
Hard maple	80.8	...	20.6	22.5	12.6	11.5	6.3	5.9	1.5
Soft maple	14.5	...	1.3	1.4	2.3	2.0	2.1	4.2	1.1
Boxelder	4.7	...	1.7	1.1	...	0.8	...	1.1	...
Beech	54.5	...	9.5	11.6	6.8	8.0	3.7	11.9	2.9
Sweetgum	25.9	...	8.1	7.4	7.0	1.4	0.4	1.7	...
Blackgum	13.2	...	3.4	3.2	3.7	2.0	...	1.1	...
White ash	41.9	...	8.9	11.7	9.0	5.2	3.6	3.1	0.3
Other ashes	18.4	...	6.0	2.6	3.7	2.2	2.5	1.3	...
Sycamore	13.2	...	0.8	1.5	1.1	1.6	3.9	4.4	...
Basswood	10.0	...	1.1	1.7	1.8	2.6	1.0	1.8	...
Yellow-poplar	170.5	...	21.2	33.3	31.0	29.5	19.4	33.0	3.2
Black walnut	15.6	...	4.9	4.1	2.9	0.6	2.3	0.8	...
Black cherry	8.7	...	1.4	3.4	1.6	2.4	...	...	...
American elm	11.6	...	2.8	3.8	0.8	1.3	1.1	0.8	1.0
Other elms	8.5	...	2.9	1.9	1.9	0.9	0.4	0.5	...
River birch	0.2	...	...	...	...	0.2	...	...	...
Hackberry	27.6	...	9.6	8.8	3.7	1.7	1.9	1.8	...
Black locust	8.6	...	2.0	3.2	1.2	1.2	0.6	0.4	...
Other locusts	1.0	...	0.7	0.3	...	...	...	...	...
Sassafras	23.6	...	7.4	6.5	5.2	1.9	2.1	0.4	...
Other commercial	4.7	...	1.7	1.4	0.4	0.5	...	0.7	...
Total hardwoods	1175.5	...	248.9	291.0	211.1	162.1	101.7	138.4	22.4
All species	1214.7	18.2	260.9	295.2	214.5	163.1	101.8	138.5	22.4

Table 36–*Volume of timber on timberland by species and class of timber, Central Tennessee Counties, 1989*

Species	All live	Growing stock	Rough	Rotten
	- - - - - - - - - - - - *Million*	*cubic*	*feet* - - - - - - - - - - - -	
Shortleaf pine	0.5	0.5	...	...
Loblolly pine	11.6	11.6	...	...
Virginia pine	2.7	2.5	0.2	...
E. white pine	3.6	3.1	0.4	...
Redcedar	148.1	120.3	26.7	1.0
Total softwoods	166.5	138.1	27.4	1.0
Select white oaks	284.3	262.9	17.3	4.1
Select red oaks	115.9	111.5	1.4	3.0
Other white oaks	171.7	157.3	10.6	3.8
Other red oaks	288.1	269.9	10.4	7.9
Other hickories	379.7	357.7	16.8	5.2
Persimmon	11.6	10.8	0.7	0.1
Hard maple	203.3	168.7	27.2	7.4
Soft maple	46.3	34.8	5.4	6.1
Boxelder	20.6	11.8	8.6	0.2
Beech	114.0	88.1	7.4	18.4
Sweetgum	54.8	52.0	2.5	0.4
Blackgum	38.8	33.7	4.0	1.0
White ash	108.8	91.1	15.4	2.2
Other ashes	46.7	40.5	5.3	0.9
Sycamore	22.2	19.0	2.7	0.5
Basswood	15.4	15.1	0.2	0.1
Yellow-poplar	251.1	245.7	2.5	2.9
Magnolia	0.8	0.8	...	...
Black walnut	47.6	40.8	5.5	1.3
Black cherry	22.6	18.0	4.4	0.2
American elm	38.7	29.9	8.3	0.5
Other elms	52.5	44.2	7.7	0.7
River birch	0.5	0.3	...	0.2
Hackberry	107.5	75.7	27.4	4.5
Black locust	46.4	34.3	7.6	4.4
Other locusts	9.1	7.3	1.1	0.7
Sassafras	78.5	69.9	6.8	1.7
Dogwood	4.7	0.9	3.7	0.1
Holly	0.4	...	0.4	...
Other commercial	24.8	12.0	12.0	0.8
Total hardwoods	2607.4	2304.7	223.3	79.4
Noncommercial	44.8	...	44.8	...
All species	2818.6	2442.7	295.5	80.4

Table 37–*Volume of sawtimber for tree grade 1 on timberland by detailed species and diameter class, Central Tennessee Counties, 1989*

Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
					Million board feet				
Redcedar	142.4	68.2	44.1	17.2	10.1	2.7	...	...	...
Total softwoods	142.4	68.2	44.1	17.2	10.1	2.7	...	...	...
Select white oaks	94.1	...	...	...	13.6	25.9	18.0	33.5	3.0
Select red oaks	36.0	...	...	...	3.1	14.9	8.8	9.2	...
Other white oaks	23.3	...	...	...	3.8	6.1	6.8	3.6	2.9
Other red oaks	98.6	...	...	...	9.9	22.3	21.6	33.9	10.9
Other hickories	29.5	...	...	...	4.3	18.6	6.6	...	...
Hard maple	3.4	...	...	...	3.4	...	...	...	...
Soft maple	5.8	...	...	...	5.8	...	...	...	...
Boxelder	4.1	...	...	...	...	4.1	...	...	...
Sweetgum	20.3	...	...	...	10.0	...	...	10.4	...
Blackgum	15.8	...	...	...	5.9	9.9	...	...	...
White ash	46.4	...	...	...	21.6	9.2	6.2	9.5	...
Other ashes	19.4	...	...	...	4.8	3.3	7.8	3.5	...
Sycamore	15.9	...	...	...	3.6	...	6.9	5.3	...
Basswood	4.8	...	...	...	...	...	...	4.8	...
Yellow-poplar	123.6	...	...	...	6.6	17.1	28.6	71.3	...
Other elms	1.9	...	...	...	...	...	...	1.9	...
Hackberry	4.3	...	...	...	2.5	...	...	1.7	...
Sassafras	2.0	...	...	...	2.0	...	...	...	...
Other commercial	8.0	...	...	...	...	3.3	...	4.7	...
Total hardwoods	557.0	...	...	...	100.8	134.8	111.4	193.3	16.8
All species	699.4	68.2	44.1	17.2	110.9	137.5	111.4	193.3	16.8

Table 38–*Volume of sawtimber for tree grade 2 on timberland by detailed species and diameter class, Central Tennessee Counties, 1989*

Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
		Diameter class (inches at breast height)							
	Million board feet								
Shortleaf pine	1.9	...	...	...	1.9	...	...	...	...
Loblolly pine	3.3	1.2	2.1	...	...	...	...	...	...
E. white pine	4.8	...	4.8	...	...	...	...	...	...
Total softwoods	10.0	1.2	6.9	...	1.9	...	...	...	...
Select white oaks	229.0	...	...	69.9	62.4	40.4	35.8	20.5	...
Select red oaks	99.3	...	...	25.0	9.6	41.3	5.7	14.9	2.8
Other white oaks	102.7	...	...	17.9	29.4	3.8	24.5	20.1	7.1
Other red oaks	243.0	...	...	47.5	34.0	56.1	37.7	52.4	15.3
Other hickories	218.1	...	...	98.8	62.3	38.7	5.7	12.7	...
Hard maple	58.5	...	...	14.8	23.2	4.0	3.9	12.7	...
Soft maple	13.8	...	...	...	...	2.7	5.9	5.2	...
Beech	3.8	...	...	1.6	2.2	...	...	...	...
Sweetgum	15.0	...	...	7.7	2.3	5.1	...	...	...
Blackgum	10.9	...	...	6.9	2.1	...	...	2.0	...
White ash	81.8	...	...	45.5	12.0	12.1	8.9	3.2	...
Other ashes	25.4	...	...	5.2	9.1	6.2	4.9	...	...
Sycamore	13.8	...	...	...	...	3.4	2.3	8.1	...
Basswood	29.2	...	...	2.8	...	14.6	4.3	7.5	...
Yellow-poplar	215.1	...	...	39.0	50.2	41.1	27.2	47.0	10.6
Black walnut	22.5	...	...	9.8	6.7	...	5.9	...	...
Black cherry	12.4	...	...	9.9	...	2.5	...	...	...
American elm	15.5	...	...	4.1	3.4	6.4	...	1.6	...
Other elms	8.5	...	...	1.5	7.0	...	...	...	...
Hackberry	24.8	...	...	4.8	5.6	5.5	5.5	3.5	...
Black locust	8.8	...	...	...	3.2	3.0	2.6	...	...
Sassafras	33.1	...	...	8.7	13.9	3.8	6.7	...	...
Other commercial	2.7	...	...	2.7	...	...	...	...	...
Total hardwoods	1487.8	...	...	424.0	338.6	290.4	187.7	211.3	35.8
All species	1497.7	1.2	6.9	424.0	340.5	290.4	187.7	211.3	35.8

Table 39–*Volume of sawtimber for tree grade 3 on timberland by detailed species and diameter class, Central Tennessee Counties, 1989*

Species	All classes	Diameter class (inches at breast height)							
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Loblolly pine	17.1	11.5	4.3	...	1.3	...	...	...	...
Virginia pine	3.9	1.7	...	...	2.1	...	...	...	...
E. white pine	4.7	2.9	1.8	...	...	...	...	...	...
Total softwoods	25.6	16.1	6.1	...	3.4	...	...	...	...
Select white oaks	381.9	...	128.2	101.0	92.9	23.2	18.1	18.4	...
Select red oaks	188.9	...	59.1	38.8	24.0	38.4	8.7	16.8	3.1
Other white oaks	246.4	...	60.9	65.9	49.5	27.3	17.1	22.5	3.0
Other red oaks	440.9	...	118.9	105.2	85.9	50.0	35.0	45.8	...
Other hickories	451.9	...	185.6	149.4	40.3	31.7	14.3	10.7	19.9
Persimmon	11.1	...	8.4	...	2.7	...	...	...	...
Hard maple	229.7	...	59.0	59.9	27.4	41.9	24.2	14.4	2.9
Soft maple	36.2	...	6.2	7.9	3.7	6.2	7.3	4.9	...
Boxelder	4.7	...	3.5	1.2	...	...	...	...	...
Beech	60.2	...	10.6	2.8	16.1	6.2	2.7	15.6	6.2
Sweetgum	79.5	...	29.8	23.6	22.5	3.7	...	...	...
Blackgum	26.2	...	9.6	8.0	8.6	...	...	...	...
White ash	94.8	...	43.2	20.9	12.5	8.0	6.0	2.7	1.4
Other ashes	51.9	...	28.6	8.6	8.6	...	4.1	2.1	...
Sycamore	29.9	...	2.5	2.7	2.7	2.7	13.1	6.3	...
Basswood	16.7	...	6.7	7.1	...	...	2.9	...	...
Yellow-poplar	406.6	...	82.1	107.5	66.1	46.1	45.5	54.2	5.1
Black walnut	49.3	...	23.0	9.8	7.5	4.1	2.5	2.5	...
Black cherry	12.9	...	1.2	3.3	2.3	6.1	...	...	...
American elm	31.3	...	11.6	6.5	1.6	...	7.5	2.2	1.9
Other elms	21.9	...	12.8	5.4	1.4	2.2	...	...	...
Hackberry	36.7	...	14.5	10.5	5.2	3.4	2.0	1.3	...
Black locust	17.3	...	3.5	8.8	1.6	1.1	...	2.2	...
Other locusts	3.1	...	1.3	1.8	...	...	...	...	...
Sassafras	69.1	...	31.0	19.6	7.7	7.8	2.9	...	...
Other commercial	9.9	...	5.5	2.2	2.2	...	...	...	...
Total hardwoods	3009.2	...	947.4	778.5	493.0	310.2	213.9	222.7	43.4
All species	3034.8	16.1	953.6	778.5	496.4	310.2	213.9	222.7	43.4

Table 40–*Volume of sawtimber for tree grade 4 on timberland by detailed species and diameter class, Central Tennessee Counties, 1989*

		Diameter class (inches at breast height)							
Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Select white oaks	112.5	...	30.2	24.4	25.8	15.3	6.6	10.1	...
Select red oaks	74.7	...	5.3	30.4	29.1	...	...	9.8	...
Other white oaks	87.7	...	15.7	21.5	18.1	12.7	6.5	6.9	6.3
Other red oaks	155.1	...	41.0	52.9	16.9	22.8	6.8	14.7	...
Other hickories	211.7	...	71.0	63.9	50.2	11.2	2.9	12.5	...
Hard maple	167.9	...	59.1	50.5	22.6	18.4	8.8	8.5	...
Soft maple	19.9	...	1.3	...	2.4	3.3	...	11.9	1.0
Boxelder	14.0	...	5.0	3.3	...	0.5	...	5.2	...
Beech	198.6	...	38.9	58.6	20.6	30.4	15.2	27.8	7.0
Sweetgum	25.4	...	10.3	7.9	7.2	...	...	...	...
Blackgum	15.1	...	7.8	1.6	3.0	2.7	...	...	...
White ash	6.7	...	3.7	1.7	1.3	...	...	...	...
Other ashes	7.8	...	3.8	2.0	2.1	...	...	...	...
Sycamore	8.3	...	1.3	4.0	...	2.9	...	...	...
Basswood	5.3	...	...	...	5.3	...	...	...	...
Yellow-poplar	261.1	...	41.5	45.6	54.8	75.7	11.9	31.6	...
Black walnut	11.4	...	4.1	4.8	...	...	2.4	...	...
Black cherry	16.5	...	5.3	3.9	3.0	4.3	...	...	...
American elm	18.1	...	2.2	10.1	...	...	...	...	5.8
Other elms	10.9	...	2.8	2.4	...	3.4	2.3	...	...
Hackberry	83.1	...	35.0	29.6	9.4	1.8	4.9	2.4	...
Black locust	15.8	...	7.3	6.0	2.5	...	...	...	...
Other locusts	1.5	...	1.5	...	...	...	...	...	...
Sassafras	15.5	...	7.1	4.5	1.3	...	...	2.6	...
Other commercial	3.6	...	3.6	...	...	...	...	...	...
Total hardwoods	1548.1	...	404.9	429.7	275.5	205.4	68.3	144.1	20.1
All species	1548.1	...	404.9	429.7	275.5	205.4	68.3	144.1	20.1

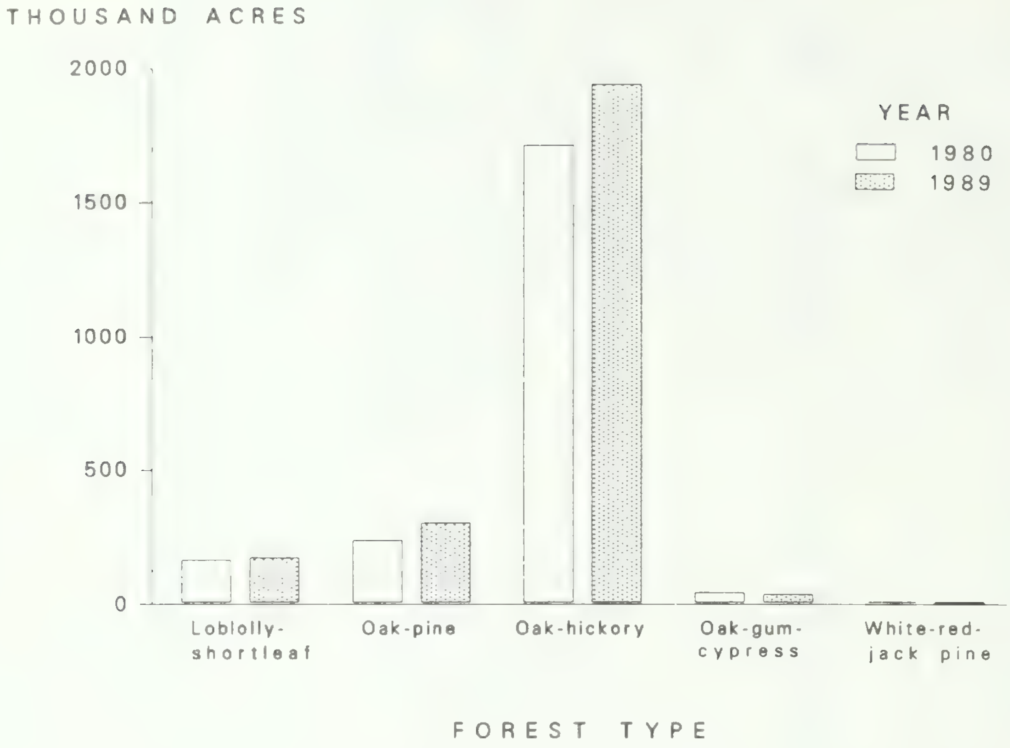

Figure 1.--Area of timberland by forest type, Central Tennessee, 1980 and 1989.

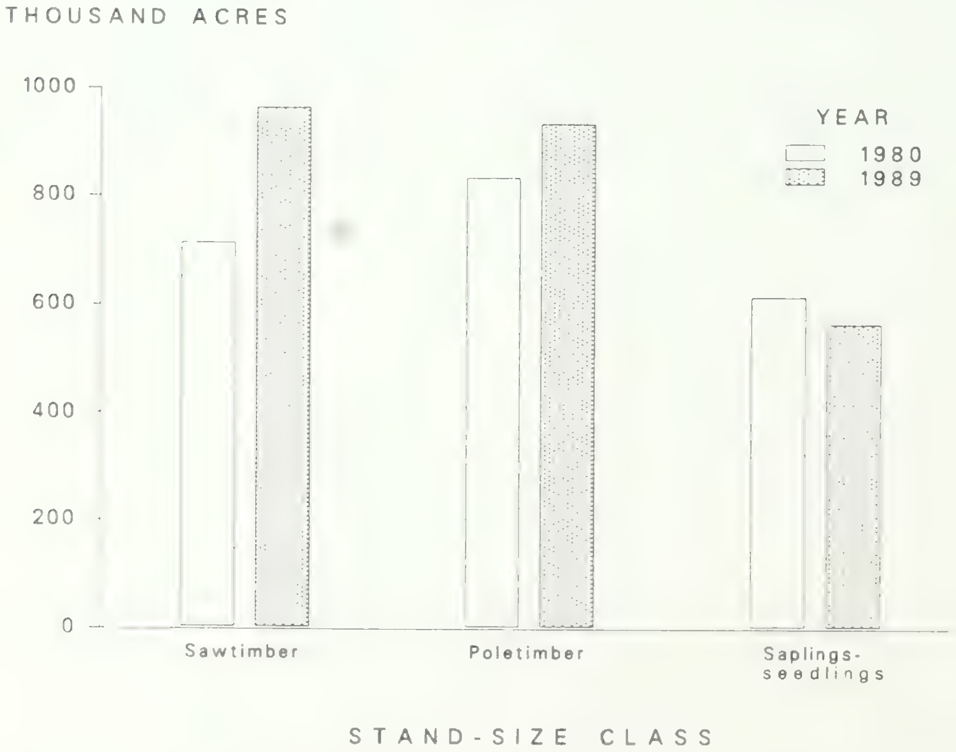

Figure 2.--Area of timberland by stand-size class, Central Tennessee, 1980 and 1989.

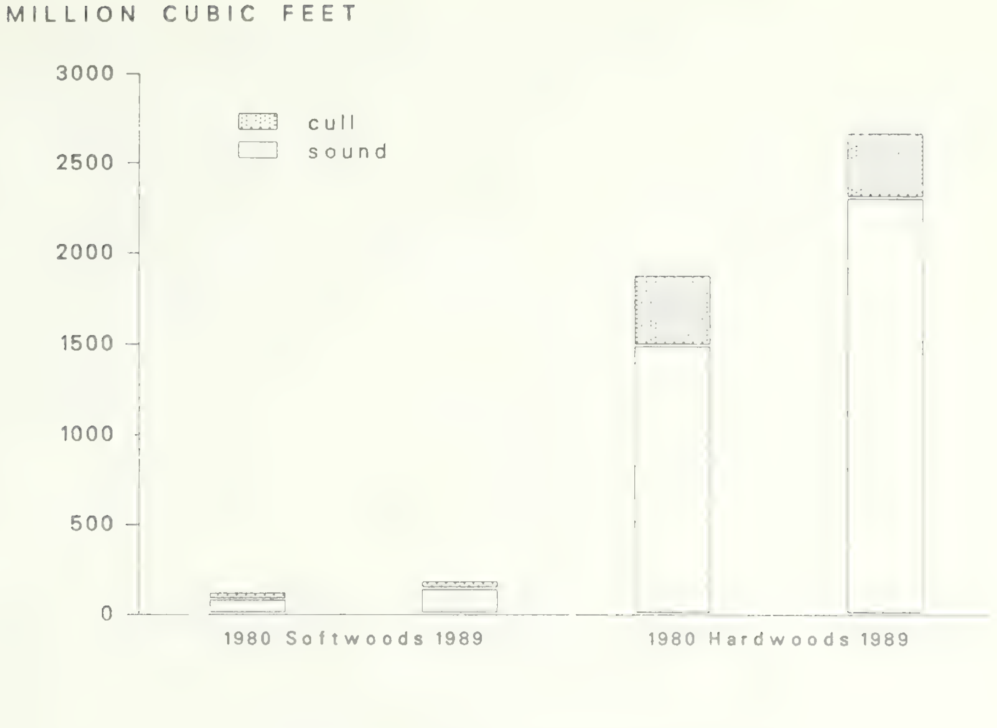

Figure 3.--Volume of timber on timberland by species group and class of timber, Central Tennessee, 1980 and 1989.

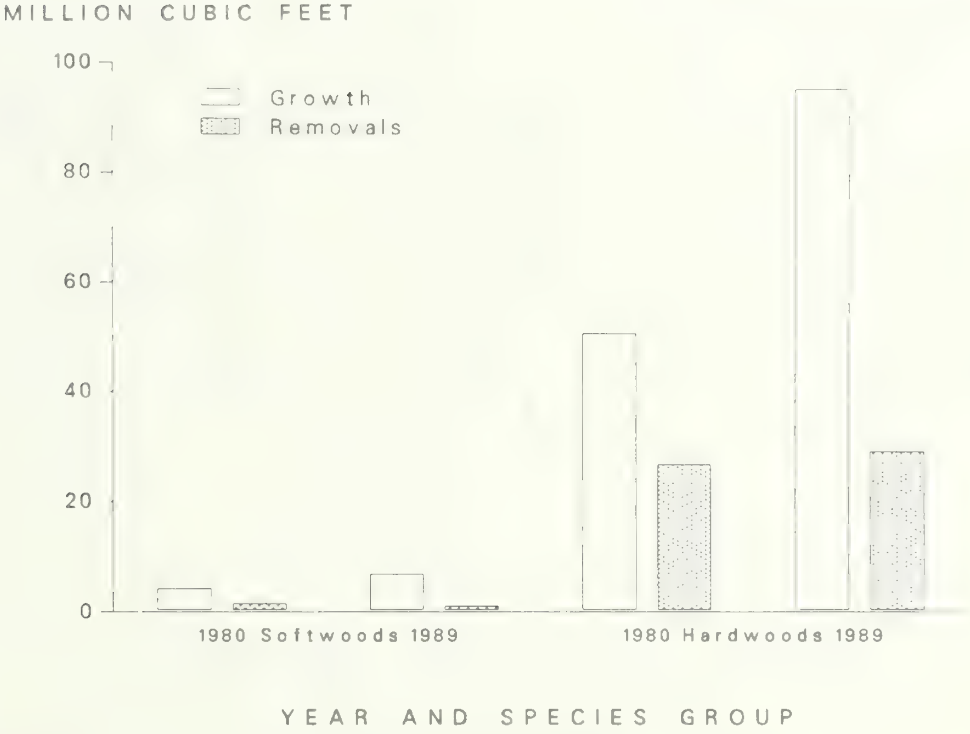

Figure 4.--Average net annual growth and average annual removals of growing stock on timberland by species group, Central Tennessee, 1980 and 1989.

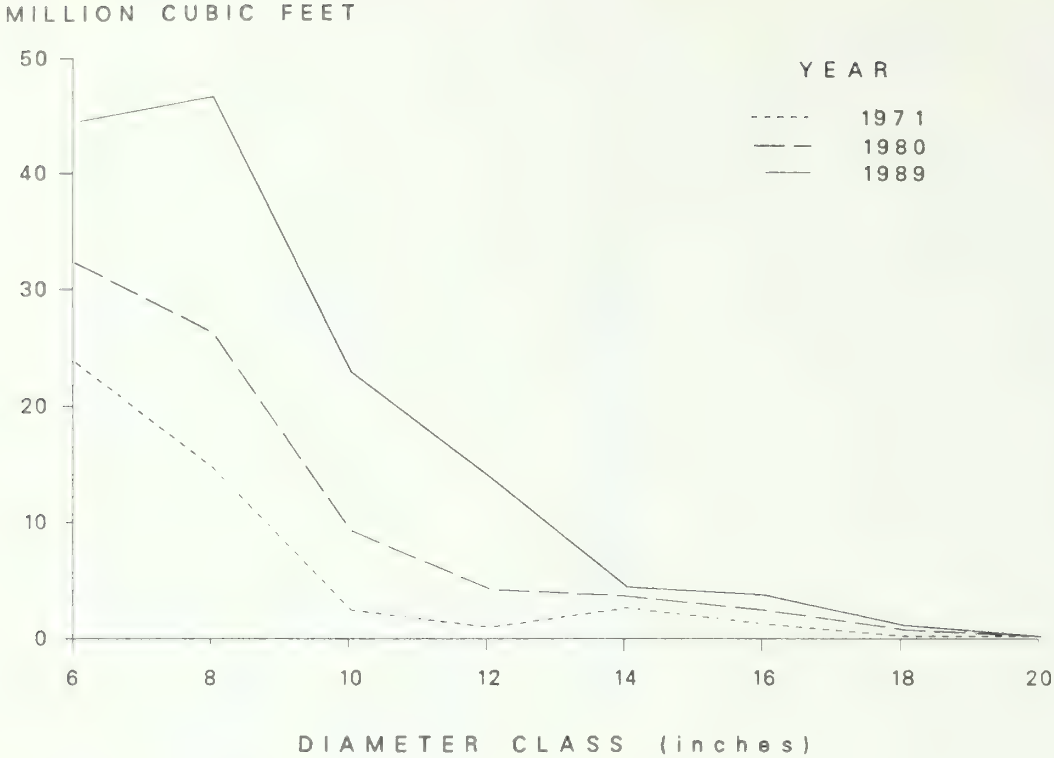

Figure 5.--Volume of softwood growing stock on timberland by diameter class, Central Tennessee, 1971, 1980, and 1989.

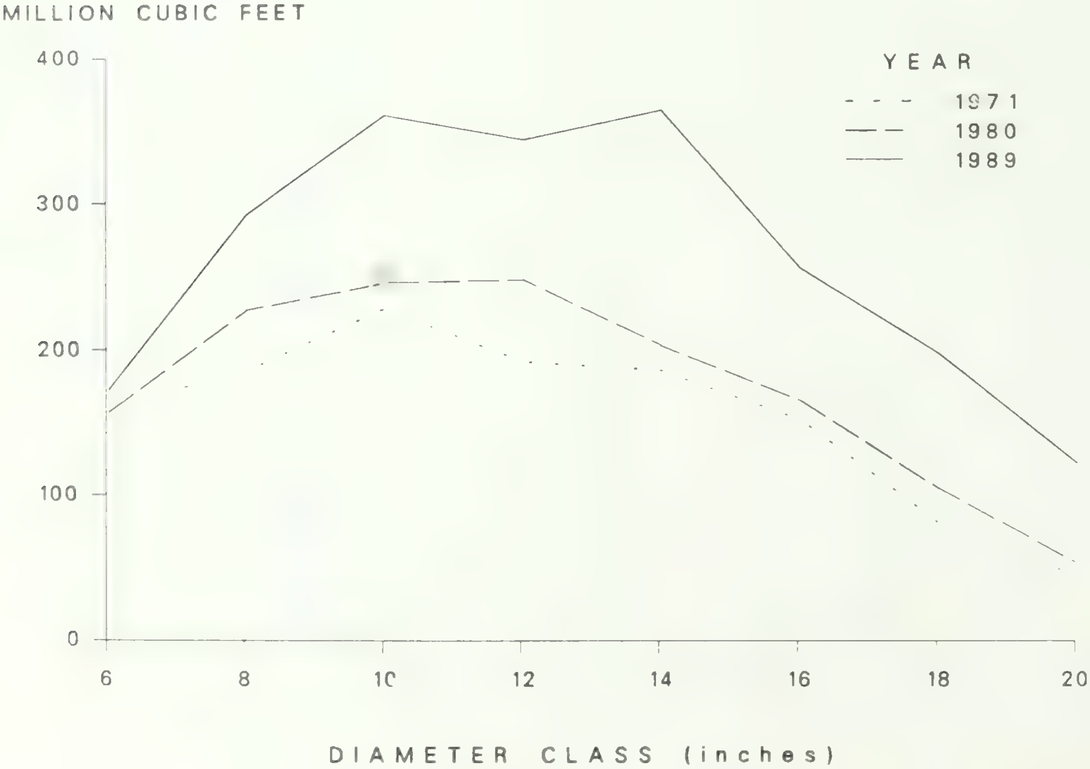

Figure 6.--Volume of hardwood growing stock on timberland by diameter class, Central Tennessee, 1971, 1980, and 1989.

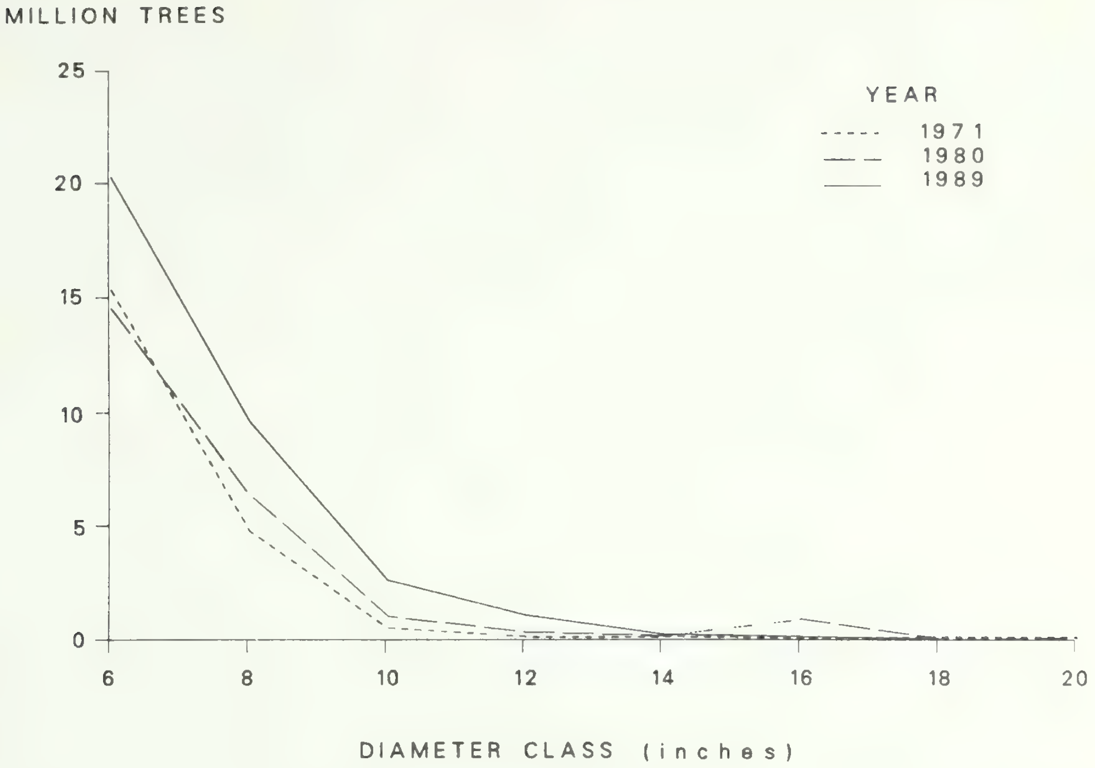

Figure 7.--Number of softwood growing-stock trees on timberland by diameter class, Central Tennessee, 1971, 1980, and 1989.

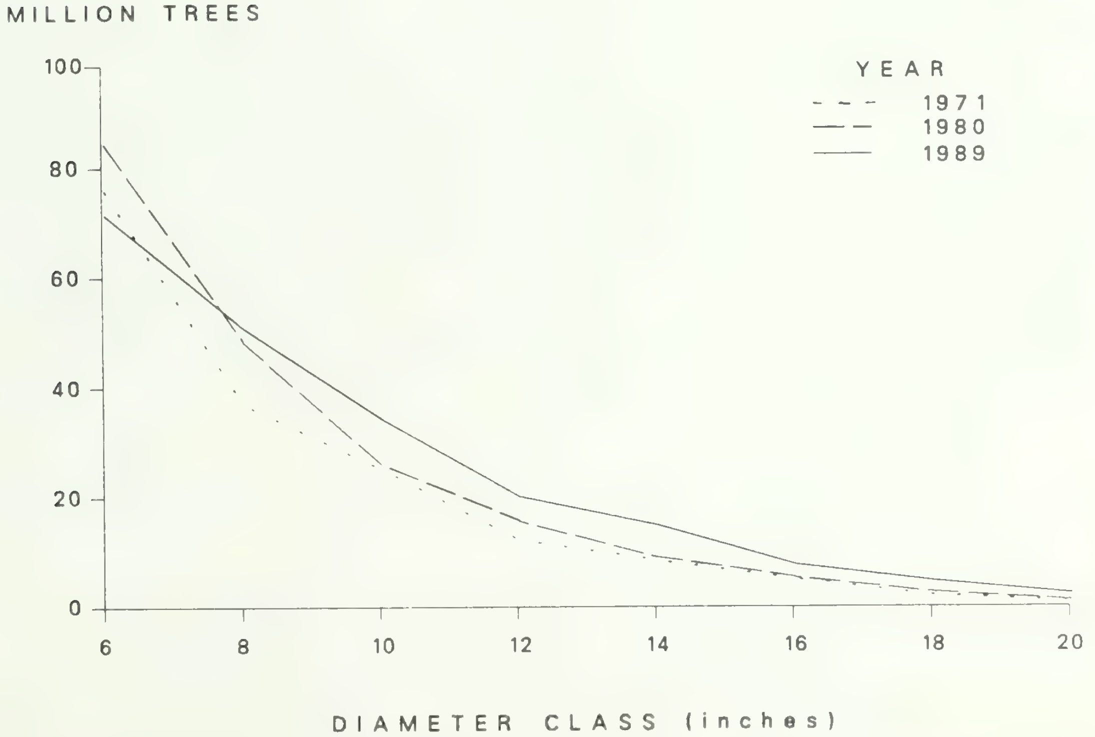

Figure 8.--Number of hardwood growing-stock trees on timberland by diameter class, Central Tennessee, 1971, 1980, and 1989.

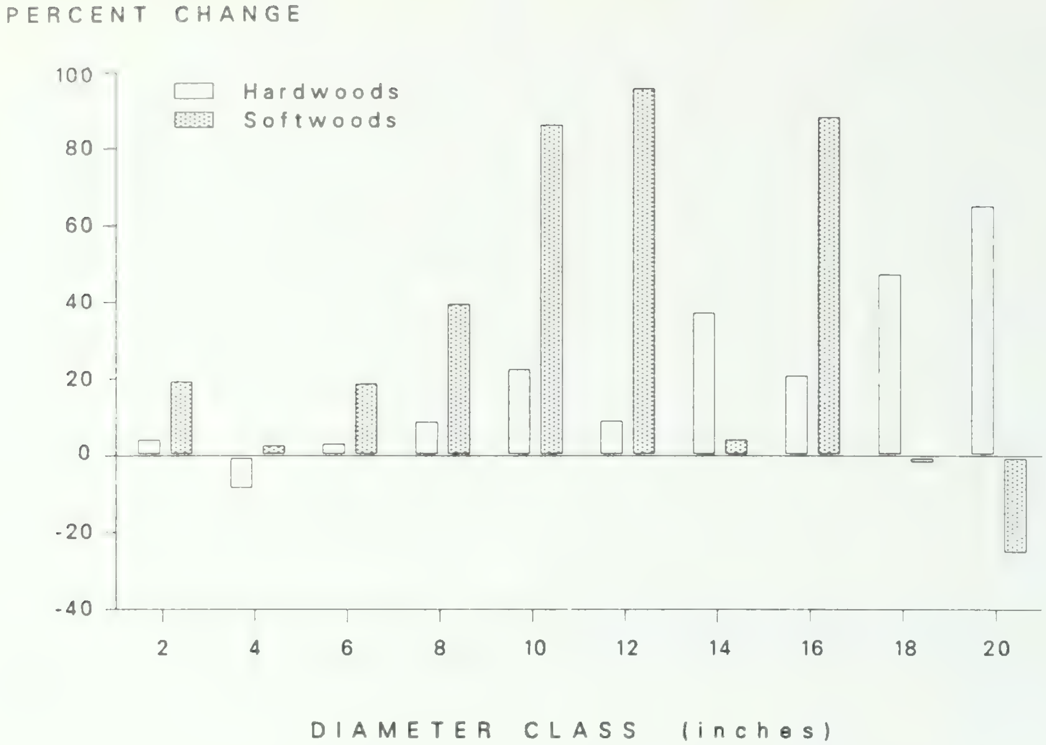

Figure 9.--Percent change in the number of live trees on timberland by species group and diameter class, Central Tennessee, 1980 and 1989.

ACKNOWLEDGMENTS

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Tabulates forest resource information from a new inventory of the Central Unit of Tennessee.

Additional Keywords: Area, volume, forest type, stand size, ownership.

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Forest Statistics for West-Central Tennessee Counties —1989

Dennis M. May and John S. Vissage

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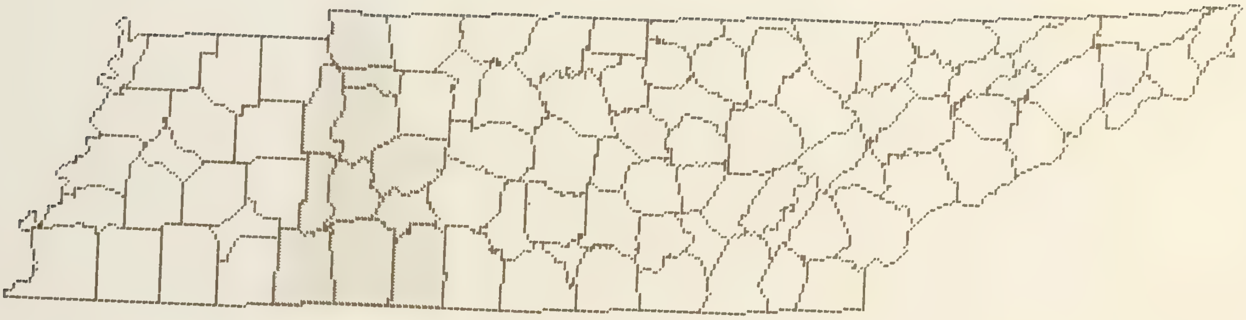

SUMMARY

The 1989 survey of the West-Central Unit of Tennessee revealed the following:

- Timberland now covers 2,333.7 thousand acres, a 7 percent increase since 1980.
- Sixty-nine percent of the unit is covered by timberland.
- Ninety-four percent of the unit's timberland is privately owned.
- Forest industry controls over one-fifth of the unit's timberland.
- Hardwood forest types occupy 90 percent of the unit's timberland.
- The number of softwood growing-stock trees increased 5 percent, while hardwood numbers declined 27 percent.
- Softwood growing-stock volume increased 3 percent to 161.1 million cubic feet and hardwood growing-stock volume climbed 22 percent to 2368.1 million cubic feet.
- Hardwood grade 1 volume decreased 40 percent since 1980.
- Growing-stock growth decreased 4 percent, while sawtimber growth increased 4 percent.
- Growing-stock mortality tripled and sawtimber mortality quadrupled since 1980.
- Softwood removals doubled due to increased yellow pine harvests, while only sawtimber removals increased for hardwoods.
- Growth exceeds removals by 2 to 1 for hardwoods, but growth equals removals for softwoods.

FOREWORD

The Southern Forest Survey, an activity of the Southern Forest Experiment Station Forest Inventory and Analysis work unit, covers the States of Alabama, Arkansas, Louisiana, Mississippi, Oklahoma, Tennessee, and Texas, and the island of Puerto Rico.

This survey is part of the nationwide Forest Survey originally authorized by the McSweeney-McNary Act of 1928. More recent legislation pertinent to the survey mission includes the Forest and Rangeland Renewable Resources Planning Act of 1974 and the Forest and Rangeland Renewable Resources Research Act of 1978. The survey mission is to develop, analyze, and maintain renewable forest resource information. This information is essential for formulation of forest policies and programs.

July 1989

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*Core tables are presented in response to the Southern Industrial Forestry Research Council's recommendations. These tables are identical among Forest Inventory and Analysis units in the eastern United States.

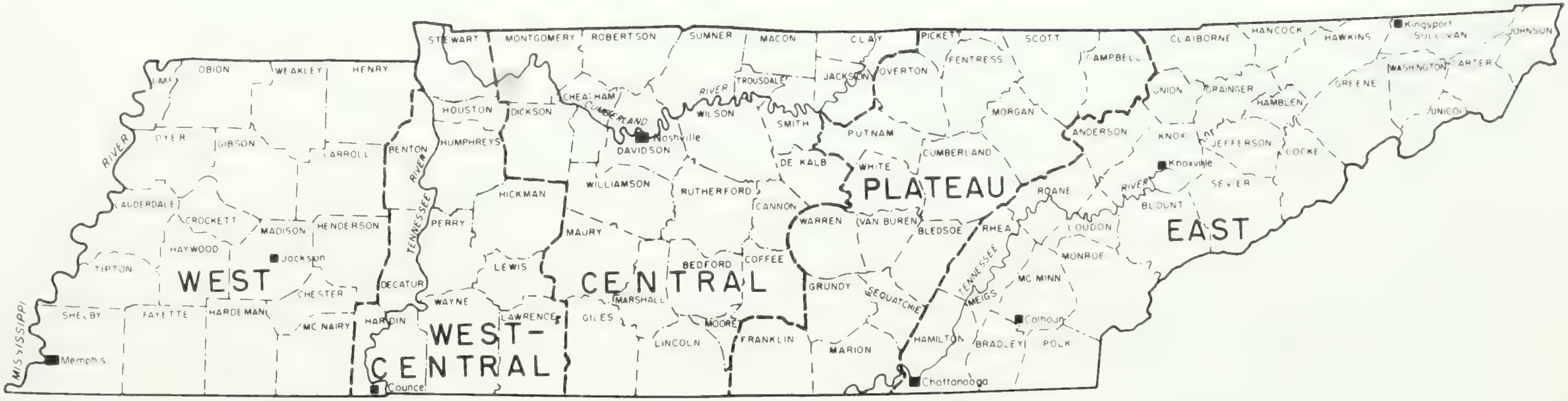

Figure I.-The forest survey regions of Tennessee.

Forest Statistics for West-Central Tennessee Counties —1989

Dennis M. May and John S. Vissage

INTRODUCTION

Tabulated results were derived from data obtained during a recent inventory of 11 counties comprising the West-Central Unit of Tennessee (fig. I). Tables 1-25 were developed to provide compatibility among Forest Inventory and Analysis Projects. Tables 26-40 are supplementary tables and may change from unit to unit or State to State to address specific resource issues.

Data on forest acreage and timber volume were secured by a three-step process. A forest-nonforest classification using aerial photographs was accomplished for points representing approximately 230 acres. These photo classifications were adjusted based on ground observations at sample locations representing approximately 3,840 acres. Finally, field measurements were made at forest locations on the intersections of grid lines spaced 3 miles apart. At these forest locations, per acre estimates were obtained from trees measured on ten 37.5 basal area factor prism points.

The sampling methods were designed to achieve suitable sampling errors for estimates of area and volume at the State level. Sampling error increases as the area or volume considered decreases. The sampling errors presented in table I, equal to one standard deviation for the sample data, may be used to construct confidence intervals for population estimates. For example, at the 95 percent confidence level, the confidence interval for growing-stock volume (in million cubic feet) in the West-Central Unit of Tennessee (with a sampling error of 3.5 percent) is

$$2{,}529.1 \pm 1.96(0.035 \times 2{,}529.1) = 2{,}529.1 \pm 173.5$$

where 1.96 is the number of standard deviations. This confidence interval indicates a 95-percent degree of confidence that the range, 2,355.6 to 2,702.6 million cubic feet, will contain the true growing-stock inventory volume.

Sampling errors for sub-groups of counties in the unit may be estimated by the following formula:

$$SE_g = \frac{SE_t\sqrt{X_t}}{\sqrt{X_g}}$$

where:

SE = standard error of estimate (expressed as a percent)
X = variable of interest (area or volume)
g = group of counties to be combined
t = total for the unit.

For example, the sampling error estimate of growing-stock volume for Hardin, Lawrence, and Wayne counties is 6.4 percent. Thus, the 95 percent confidence interval for growing-stock volume is 765.6 ± 96.0 million cubic feet.

Ownership information is obtained through the 3-mile grid sample outlined above. County courthouse records are used to obtain ownership information for each forested plot. An expansion factor representing timberland area in that county is then applied to the ownership group the plot represents. Next, the ownership groups are totaled for each county. Thus, acreages reported at the county level are estimates and may not exactly match known totals for each ownership category within that county.

Table I—*Sampling errors*[1] *for timberland, growing stock, and sawtimber, West-Central Tennessee Counties, 1989*

County	Timberland	Growing stock			Sawtimber volume
		Volume	Growth	Removals	
	Percent				
Benton	2.9	13.5	19.5	37.0	18.3
Decatur	3.4	10.9	12.5	28.4	14.2
Hardin	2.5	14.5	11.2	29.0	21.0
Hickman	1.7	8.3	13.6	17.6	11.4
Houston	1.9	16.4	13.9	...	21.5
Humphreys	2.7	10.2	16.3	33.7	13.4
Lawrence	1.6	15.0	13.3	21.6	19.4
Lewis	2.8	12.9	13.2	30.8	19.2
Perry	1.1	9.4	12.9	18.2	10.1
Stewart	2.9	11.2	15.2	18.8	13.6
Wayne	1.9	7.7	9.7	17.6	10.7
All Counties	0.7	3.5	4.7	8.0	4.8

[1] By random-sampling formula.

In order to achieve greater compatibility among Forest Inventory and Analysis Projects, a new tree classification system has been in effect since the 1988 Arkansas survey. Tree grade 5 is used to designate trees currently or prospectively capable of producing at least one 12-foot log or two 8-foot logs in the saw-log portion but not able to produce a 12-foot log in the butt 16 feet. These trees, formerly classed as rough or rotten, are now included in growing stock. Table II shows the impact of this change on volume and growth.

HIGHLIGHTS

Area

The West-Central Unit of Tennessee falls mainly within the western Highland Rim and is characteristically hilly with broken terrain and poor soils. As a consequence, the unit has always been heavily forested and remains so today with 69 percent of its area in timberland. However, areas of more fertile soils are found in stream bottoms and in unflooded portions of the Tennessee River Valley, and serve as focal points of agricultural development. Since the 1960's, agricultural and other land uses have been gaining at the expense of the unit's timberlands. However, a 7-percent increase in timberland since 1980 has reversed this trend, bringing the total timberland in the unit to 2,333.7 thousand acres.

Most of the timberland in the unit is privately held with only 6 percent in public ownership. In a pattern seen in other units of the state, timberland ownership by farmers declined appreciably, while sizable gains were made in individual and corporate holdings since 1980. The forest industry has its largest presence in this unit of the state, controlling over one-fifth of all timberland. Although forest industry ownership increased only slightly since 1980, there has been a shifting in the types of forests owned. The area in pine and oak-pine stands more than doubled since 1980, while the area in hardwood stands declined. This shifting is a reflection of forest industry's emphasis on pine management as hardwood stands on pine sites are converted to pine plantations.

Since 1980, roughly 60 thousand acres of pine plantations have been established in the unit, bringing the total to 136 thousand acres. As a consequence, planted softwood stands now outnumber natural stands by 2 to 1. Although these trends in the softwood forests are significant, the unit remains predominantly a hardwood unit. Upland hardwood forest types alone account for 87 percent of the unit's timberland. When combined with the bottomland hardwoods, the only forest type group to decline in acreage since 1980, hardwood forests occupy 90 percent of the unit's timberland.

The shifting of the softwood forest from a natural to plantation based resource has greatly affected its stand-size distribution. Since 1980, the area in sawtimber-sized stands has remained essentially unchanged, while the areas in pole and sapling-sized stands have increased by over one-third. The stand-size distribution of the rejuvenating softwood forest contrasts with the stand-size distribution of the maturing hardwood and mixed forests. Since 1980, 132 thousand additional acres of hardwood and mixed forests have been classified as sawtimber-sized, while the areas in pole and sapling-sized stands have remained essentially unchanged.

Table II–*Changes in volume and growth estimates due to inclusion of tree grade 5 in growing-stock inventory, West-Central Tennessee Counties, 1989*

	Tree grade 5		
	Excluded from growing stock	Included in growing stock	Percent change
Softwood:			
Growing-stock volume	157.3	161.1	2.4
Rough and rotten volume	9.8	6.0	-38.8
Growing-stock growth	8.0	8.4	5.0
Hardwood:			
Growing-stock volume	2252.4	2368.1	5.1
Rough and rotten volume	310.2	194.6	-37.3
Growing-stock growth	70.1	82.6	17.8
Softwood:			
Sawtimber volume	409.3	415.2	1.4
Sawtimber growth	27.0	27.7	2.6
Hardwood:			
Sawtimber volume	6219.6	6549.3	5.3
Sawtimber growth	285.0	320.6	12.5

Timber Inventory

The impacts of the changing stand-size distributions on the unit's forests are extremely evident in the inventory statistics. In the rejuvenating softwood resource, the increases in softwood growing-stock numbers in the smaller size classes due to the planting of loblolly pine and natural regeneration of redcedar and Virginia pine have been offset by intensive harvesting of larger softwoods, especially shortleaf pine. As a result, softwood growing-stock numbers increased only 5 percent since 1980. Similarly, the intense harvesting of the larger trees and concentration of smaller trees below the 5-inch threshold, resulted in the softwood growing-stock volume increasing only 3 percent to 161.1 million cubic feet. A large part of the increase was due to an influx of smaller softwoods into the 6-inch class. The concentration of softwood removals in the larger size classes is evident in the 2-percent decline in softwood sawtimber inventory since 1980. Much of the loss was concentrated in natural shortleaf and planted loblolly pines. Since 1980, pine volume has declined in plantations and remained stable in natural stands. However, planted pine volume increased and natural pine volume decreased on forest industry lands, while the opposite is true on other private timberlands.

The hardwood resource followed the expected trends of a maturing forest. Hardwood growing-stock numbers declined 27 percent since 1980 with all of the loss in the 6-inch and smaller size classes. At the same time, the number of sawtimber-sized trees increased by 31 percent. As a result, hardwood growing-stock volume climbed 22 percent to 2368.1 million cubic feet and sawtimber volume jumped by one-third.

With 94 percent of the unit's sawtimber volume in hardwoods, the quality associated with this resource is of special concern. Even though hardwood sawtimber volumes have been increasing, quality has been decreasing. Since 1980, the volume in grade 1 fell 40 percent, reducing the proportion of the hardwood sawtimber volume in grade 1 from 12 to 6 percent.

Growth, Removals, and Mortality

On an annual basis, net growth for the unit averaged 91.0 million cubic feet for growing stock and 348.3 million board feet for sawtimber. These growth figures reflect the physical change in the inventory over the survey period as well as a growing-stock definition change initiated since the 1980 survey. As a result, these growth estimates are not directly comparable to past growth estimates. Using comparable growth estimates that exclude the definition change (table II), net growth decreased 4 percent for growing stock and increased 4 percent for sawtimber. The stand dynamics of the rejuvenating softwood and maturing hardwood resources, which checked both survivor growth and ingrowth, were partially responsible for the diminished growth rates of the unit. The other culprit was the significant increase in mortality since 1980. Growing-stock mortality tripled and sawtimber mortality quadrupled mainly due to bark beetle outbreaks in the yellow pine resource and high mortality in the oak species due to disease and weather, a possible reference to the impacts of oak decline in the unit.

The impacts of the already diminished growth rates on the unit's forests were heightened by an increase in removals since 1980. On an average annual basis, growing-stock removals increased 8 percent to 51.2 million cubic feet and sawtimber removals increased 29 percent to 191.8 million board feet. These totals obscure the fact that softwood removals almost doubled for growing stock and more than doubled for sawtimber. All of these increases were due to increased harvests of yellow pines. As a result of this intensive harvesting, softwood removals equaled growth over the period, explaining the stagnated softwood inventory volume. Hardwood removals were concentrated in the sawtimber portions of the inventory as evidenced by the 1-percent decline in growing-stock removals and 20-percent increase in sawtimber removals. When this knowledge is added to the reduction in grade 1 hardwood volume, it would appear that high-grading is reducing the quality of the maturing hardwood resource. However, growth still exceeds removals by a 2 to 1 margin.

Overall, the forests of the unit are in a state of flux. The softwood resource is being rejuvenated as generally mature stands are replaced by younger plantations. As a result, softwood inventories have remained essentially unchanged since 1980, but should increase in the future as the younger stands move across the 5-inch growing-stock threshold. At the same time, the hardwood resource is maturing, but concentration of removals in larger and higher grade trees is threatening the quality of this resource.

DEFINITION OF TERMS

Average net annual growth. – Average net annual volume increase for the inter-survey period.

Average annual mortality. – Average annual sound-wood volume of growing-stock trees dying from natural causes.

Average annual removals. – Average net annual volume of growing-stock trees removed from the inventory by harvesting, cultural operations (such as timber-stand improvement), land clearing, or changes in land use.

Commercial species. – Tree species which normally develop into trees suitable for industrial wood products.

Forest land. – Land at least 16.7 percent stocked by forest trees of any size, or formerly having such tree cover, and not currently developed for nonforest use.

Forest type. – A classification of forest land based upon the species forming a plurality of live-tree stocking.

Growing-stock trees. – Live trees of commercial species. Rough and rotten trees are excluded.

Growing-stock volume. – The cubic-foot volume of sound wood in growing-stock trees at least 5.0 inches in diameter at breast height, from a 1-foot stump to a minimum 4.0-inch top diameter outside bark of the central stem, or to the point where the central stem breaks into limbs.

Live trees. – Commercial and noncommercial tree species of sapling size or larger.

Natural stands. – Stands with no evidence of artificial regeneration. This includes those established by seed tree regeneration methods.

Noncommercial species.—Tree species of typically small size, poor form, or inferior quality which normally do not develop into trees suitable for industrial wood products.

Planted stands.—Stands with some evidence of planting or direct seeding.

Poletimber trees.—Growing-stock trees at least 5.0 inches in diameter at breast height, but smaller than sawtimber size.

Reserved timberland.—Productive public forest land withdrawn from timber utilization through statute or administrative regulations.

Rotten trees.—Live trees of commercial species that do not contain at least one 12-foot log or two 8-foot logs in the saw-log portion, now or prospectively, primarily because of rot.

Rough trees.—Live trees of commercial species that do not contain at least one 12-foot log or two 8-foot logs in the saw-log portion, now or prospectively, primarily because of roughness or poor form. Also included are all live trees of noncommercial species.

Saplings.—Growing-stock trees at least 1.0 inches but less than 5.0 inches in diameter at breast height.

Sawtimber trees.—Live trees that contain at least one 12-foot log or two 8-foot logs in the saw-log portion, and meet regional specifications for freedom from defect. Softwoods must be at least 9.0 inches in diameter at breast height and hardwoods at least 11.0 inches in diameter at breast height.

Sawtimber volume.—Sound-wood volume of the saw-log portion of growing-stock sawtimber trees in board feet, International 1/4-inch rule and in cubic feet.

Seedlings.—Growing-stock trees less than 1.0 inch in diameter at breast height and greater than one foot tall for hardwoods, greater than six inches tall for softwoods, and greater than one-half inch in diameter at ground level for longleaf pine.

Select red oaks.—A classification of several red oak species composed of: cherrybark, Shumard, and northern red oaks.

Select white oaks.—A classification of several white oak species composed of: white, swamp chestnut, swamp white, chinkapin, Durand, and bur oaks.

Site class.—A classification of forest land in terms of inherent capacity to grow crops of industrial wood.

Stand-size class.—A classification of forest land based on the diameter class of live trees on the sampled area; that is, sawtimber, poletimber, or sapling and seedling.

Timberland.—Forest land that is producing, or is capable of producing, crops of industrial wood and not withdrawn from timber utilization. Timberland is synonymous with "commercial forest land" in prior reports.

Tree grade.—A classification of the volume of the saw-log portion of sawtimber trees, based on: 1) the log grade of the butt log, or 2) ability to produce at least one 12-foot or two 8-foot logs in the upper-section of the saw-log portion.

Woodland.—Forest land incapable of yielding crops of industrial wood because of adverse site conditions.

CORE TABLES 1-25

Table 1–*Area by county and land class, West-Central Tennessee Counties, 1989*

County	All land[1]	Forest land: Total	Forest land: Timberland[2]	Forest land: Woodland[3]	Forest land: Reserved timberland	Nonforest land
	Thousand acres					
Benton	279.1	172.7	172.7	...	...	106.4
Decatur	220.8	134.8	134.8	...	...	86.0
Hardin	380.9	219.9	219.9	...	...	161.0
Hickman	391.8	297.2	297.2	...	...	94.6
Houston	132.4	94.2	94.2	...	...	38.3
Humphreys	356.2	241.2	241.2	...	...	115.0
Lawrence	395.4	199.8	199.8	...	...	195.5
Lewis	180.8	158.0	158.0	...	...	22.9
Perry	271.1	223.6	223.6	...	...	47.5
Stewart	316.1	219.7	219.7	...	...	96.5
Wayne	470.7	372.6	372.6	...	...	98.1
All counties	3395.5	2333.7	2333.7	...	...	1061.8

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[1] From U.S. Bureau of the Census.

[2] Forest land (formerly termed commercial forest land) that is producing or capable of producing at least 20 cubic feet of industrial wood per acre per year. Includes areas which may be inaccessible or inoperable by current standards. Excludes reserved timberlands.

[3] Forest land incapable of producing 20 cubic feet of industrial wood per acre per year under natural conditions because of adverse site conditions.

Table 2–*Area of timberland by county and ownership class, West-Central Tennessee Counties, 1989*

County	All ownerships	National forest	Misc. federal	State	County and municipal	Forest industry[1]	Farmer	Corporate[2]	Individual[2]
	Thousand acres								
Benton	172.7	...	19.2	...	...	12.8	38.4	6.4	95.9
Decatur	134.8	...	5.4	5.4	...	...	43.1	16.2	64.7
Hardin	219.9	...	9.6	...	...	38.2	76.5	14.3	81.3
Hickman	297.2	...	...	...	...	72.9	89.7	28.0	106.5
Houston	94.2	...	...	...	...	...	21.7	7.2	65.2
Humphreys	241.2	...	...	...	...	6.0	54.3	18.1	162.8
Lawrence	199.8	...	...	20.7	...	27.6	103.4	6.9	41.3
Lewis	158.0	...	5.9	5.9	...	46.8	23.4	5.9	70.2
Perry	223.6	...	5.7	...	...	63.1	68.8	22.9	63.1
Stewart	219.7	...	62.8	6.3	...	69.0	25.1	...	56.5
Wayne	372.6	...	...	...	...	145.3	56.8	31.6	139.0
All counties	2333.7	...	108.5	38.2	...	481.7	601.3	157.5	946.5

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[1] Includes land leased to forest industry.

[2] Indian land will be classed as corporate or individual as defined by the Bureau of Indian Affairs.

Table 3–*Area of timberland by county and forest type group, West-Central Tennessee Counties, 1989*

County	Total	Forest type group				
		Loblolly-shortleaf pine				
		Planted	Natural	Oak-pine	Oak-hickory	Oak-gum-cypress
	Thousand acres					
Benton	172.7	12.8	...	12.8	140.7	6.4
Decatur	134.8	5.4	...	5.4	118.6	5.4
Hardin	219.9	33.5	14.3	38.2	100.4	33.5
Hickman	297.2	5.6	...	...	291.6	...
Houston	94.2	...	...	...	94.2	...
Humphreys	241.2	...	...	...	241.2	...
Lawrence	199.8	...	...	6.9	186.1	6.9
Lewis	158.0	5.9	...	5.9	134.6	11.7
Perry	223.6	...	11.5	5.7	200.7	5.7
Stewart	219.7	...	6.3	...	213.4	...
Wayne	372.6	25.3	12.6	18.9	309.5	6.3
All counties	2333.7	88.4	44.7	93.8	2030.9	75.9

Table 4–*Area of timberland by county and stand-size class, West-Central Tennessee Counties, 1989*

County	All classes	Stand-size class		
		Sawtimber	Poletimber	Sapling-seedling
	Thousand acres			
Benton	172.7	51.2	76.8	44.8
Decatur	134.8	75.5	48.5	10.8
Hardin	219.9	76.5	109.9	33.5
Hickman	297.2	106.5	173.8	16.8
Houston	94.2	36.2	29.0	29.0
Humphreys	241.2	108.6	90.5	42.2
Lawrence	199.8	62.0	82.7	55.1
Lewis	158.0	58.5	64.4	35.1
Perry	223.6	68.8	114.7	40.1
Stewart	219.7	125.5	50.2	43.9
Wayne	372.6	101.1	195.8	75.8
All counties	2333.7	870.4	1036.2	427.1

Table 5–*Area of timberland by county and site class, West-Central Tennessee Counties, 1989*

County	All classes	Site class (cubic feet/acre/year)				
		>165	120-165	85-120	50-85	<50
	Thousand acres					
Benton	172.7	...	6.4	57.6	89.5	19.2
Decatur	134.8	5.4	27.0	43.1	48.5	10.8
Hardin	219.9	4.8	43.0	109.9	57.4	4.8
Hickman	297.2	5.6	16.8	100.9	162.6	11.2
Houston	94.2	...	14.5	21.7	57.9	...
Humphreys	241.2	6.0	...	48.2	108.6	78.4
Lawrence	199.8	6.9	13.8	34.5	96.5	48.2
Lewis	158.0	...	...	29.3	105.3	23.4
Perry	223.6	...	11.5	51.6	114.7	45.9
Stewart	219.7	...	12.6	50.2	75.3	81.6
Wayne	372.6	...	25.3	56.8	221.1	69.5
All counties	2333.7	28.7	170.8	603.9	1137.4	392.9

Table 6–*Area of timberland by county and stocking classes of growing-stock trees, West-Central Tennessee Counties, 1989*

County	All classes	Stocking class (percent)				
		>130	100-130	60-100	16.7-60	<16.7
	Thousand acres					
Benton	172.7	...	38.4	102.3	32.0	...
Decatur	134.8	5.4	16.2	107.9	5.4	...
Hardin	219.9	4.8	23.9	157.7	33.5	...
Hickman	297.2	...	39.3	235.5	22.4	...
Houston	94.2	...	14.5	72.4	7.2	...
Humphreys	241.2	6.0	36.2	156.8	42.2	...
Lawrence	199.8	6.9	27.6	144.7	20.7	...
Lewis	158.0	...	35.1	117.0	5.9	...
Perry	223.6	...	22.9	154.8	45.9	...
Stewart	219.7	...	12.6	163.2	37.7	6.3
Wayne	372.6	...	63.2	259.0	50.5	...
All counties	2333.7	23.1	329.7	1671.4	303.3	6.3

Table 7–*Area of timberland by forest type and ownership class, West-Central Tennessee Counties, 1989*

Forest type[1]	All ownerships	National forest	Other public	Forest industry	Forest industry-leased	Other private
	Thousand acres					
Loblolly-shortleaf pine	133.1	...	6.3	55.0	4.8	67.0
Softwood total	133.1	...	6.3	55.0	4.8	67.0
Oak-pine	93.8	...	...	23.3	...	70.6
Oak-hickory	2030.9	...	128.7	398.7	...	1503.5
Oak-gum-cypress	75.9	...	11.7	...	...	64.2
Hardwood total	2200.6	...	140.4	421.9	...	1638.3
All types	2333.7	...	146.7	476.9	4.8	1705.3

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[1] Forest type is based on species plurality of all live trees. Mixed types that in combination contain a majority of hardwood stocking are hardwood types.

Table 8–*Area of timberland by ownership and stocking classes of growing-stock trees, West-Central Tennessee Counties, 1989*

Ownership class	All classes	Stocking class (percent) >130	100-130	60-100	16.7-60	<16.7
	Thousand acres					
Other public	146.7	...	18.5	96.7	25.2	6.3
Forest industry	476.9	4.8	90.9	332.5	48.8	...
Forest industry-leased	4.8	...	...	4.8	...	...
Other private	1705.3	18.3	220.3	1237.4	229.3	...
All ownerships	2333.7	23.1	329.7	1671.4	303.3	6.3

Table 9–*Area of timberland by forest type and stand-size class, West-Central Tennessee Counties, 1989*

Forest type[1]	All classes	Stand-size class Sawtimber	Poletimber	Sapling-seedling
	Thousand acres			
Loblolly-shortleaf pine	133.1	33.2	53.4	46.5
Softwood total	133.1	33.2	53.4	46.5
Oak-pine	93.8	19.7	31.8	42.4
Oak-hickory	2030.9	767.1	936.7	327.1
Oak-gum-cypress	75.9	50.4	14.3	11.2
Hardwood total	2200.6	837.2	982.8	380.6
All types	2333.7	870.4	1036.2	427.1

[1] Forest type is based on species plurality of all live trees. Mixed types that in combination contain a majority of hardwood stocking are hardwood types.

Table 10–*Number of live trees on timberland by species and diameter class, West-Central Tennessee Counties, 1989*

		Diameter class (inches at breast height)											
Species	All classes	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Shortleaf-loblolly pine	51594	16601	14624	11146	5755	1959	963	422	101	23	...	...	...
Other yellow pines	3666	438	526	1541	508	257	174	172	50	...	...	...	...
Cypress	66	...	...	...	49	...	...	...	...	9	8	...	...
Other softwoods	37919	22931	9580	3416	752	587	419	126	45	62	...	...	...
Total softwoods	93245	39970	24729	16103	7065	2803	1557	720	195	95	8	...	...
Select white oaks	114392	27927	23187	18328	13741	11990	8410	6095	2756	1191	469	278	21
Select red oaks	15771	5139	2111	2049	1948	1570	1108	871	455	315	89	103	15
Other white oaks	69949	19739	13676	12765	9750	6045	3635	2455	1094	453	215	124	...
Other red oaks	51642	17272	3774	6979	7662	5322	4502	3347	1411	693	347	322	11
Hickory	138738	69410	28831	15064	11605	7130	3961	1859	512	171	131	65	...
Hard maple	48959	35283	6634	3063	1667	950	732	364	173	56	9	27	...
Soft maple	52593	35597	10431	3103	1138	1262	564	205	204	48	8	23	9
Beech	16921	9929	1757	1317	1046	781	519	487	272	250	194	294	74
Sweetgum	47073	24637	8699	5172	4471	1656	1307	666	350	71	20	23	...
Tupelo-blackgum	156067	130050	18335	4500	1459	845	407	286	85	48	28	24	...
Ash	31608	19951	6779	1977	1484	609	350	247	151	40	19	...	3
Basswood	52	...	...	...	...	45	...	...	...	...	...	7	...
Yellow-poplar	51362	28845	9749	3627	2913	2111	1538	1040	722	416	177	210	14
Black walnut	3702	1093	1155	375	256	438	239	...	72	55	11	7	...
Other hardwoods	238718	180193	38688	11451	4264	1958	841	530	342	202	122	118	8
Total hardwoods	1037546	605064	173805	89771	63404	42711	28113	18453	8598	4008	1839	1625	155
Noncommercial	216011	150465	48876	12789	2966	663	210	23	19	...	...	...	...
All species	1346803	795498	247411	118664	73434	46178	29880	19196	8812	4103	1847	1625	155

Table 11—*Number of growing-stock trees on timberland by species and diameter class, West-Central Tennessee Counties, 1989*

Species	All classes	Diameter class (inches at breast height) 1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Shortleaf-loblolly pine	46702	12410	14038	11146	5699	1924	939	422	101	23	...	...	...
Other yellow pines	2903	...	526	1450	346	210	174	147	50	...	...	...	...
Cypress	66	...	...	...	49	...	...	...	...	9	8	...	...
Other softwoods	30570	18038	8072	2815	620	526	335	126	15	24	...	...	...
Total softwoods	80241	30448	22635	15411	6714	2660	1449	695	165	57	8	...	...
Select white oaks	97994	19109	18128	17163	13468	11773	7858	5968	2674	1165	439	242	5
Select red oaks	13128	2954	2111	1778	1877	1542	1077	849	441	301	89	96	12
Other white oaks	51381	8914	8785	11920	9355	5632	3155	2104	912	399	127	79	...
Other red oaks	44373	12346	3279	6521	7319	5026	4086	3163	1383	662	292	287	11
Hickory	97156	34780	24553	13941	11152	6724	3607	1652	461	133	110	43	...
Hard maple	26649	17184	3346	2671	1566	869	528	297	135	40	...	12	...
Soft maple	17796	10740	3566	1616	522	683	326	182	125	37	...	...	...
Beech	6619	2183	664	784	982	661	350	330	272	126	147	97	23
Sweetgum	30629	11786	6078	4463	4388	1608	1241	642	334	46	20	23	...
Tupelo-blackgum	53899	34388	12720	4030	1275	772	378	244	52	22	10	9	...
Ash	15829	8850	2928	1550	1222	531	312	247	151	25	10	...	3
Yellow-poplar	46313	26597	7679	3327	2712	2077	1447	980	706	416	167	188	14
Black walnut	1765	...	579	375	131	401	179	...	72	26	...	...	...
Other hardwoods	113915	78134	22268	6524	3663	1577	686	416	261	177	92	109	8
Total hardwoods	617444	267966	116684	76661	59629	39876	25231	17074	7979	3575	1504	1187	77
All species	697685	298414	139319	92072	66343	42536	26680	17769	8144	3632	1513	1187	77

Table 12—*Volume of growing stock on timberland by species and diameter class, West-Central Tennessee Counties, 1989*

Species	All classes	Diameter class (inches at breast height) 5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet										
Shortleaf-loblolly pine	120.8	24.7	35.3	23.4	20.2	12.5	3.7	0.9	...	...	...
Other yellow pines	14.2	2.8	1.6	2.5	3.0	3.1	1.2	...	...	...	...
Cypress	1.0	...	0.3	...	...	...	...	0.3	0.5	...	...
Other softwoods	25.0	6.9	3.7	5.6	5.0	2.8	0.4	0.7	...	...	...
Total softwoods	161.1	34.4	40.9	31.5	28.2	18.3	5.4	1.9	0.5	...	...
Select white oaks	718.2	43.3	81.1	129.9	138.8	147.8	89.0	48.6	23.5	15.1	1.1
Select red oaks	113.3	4.2	11.4	18.6	20.3	20.4	14.2	11.5	4.0	6.8	1.9
Other white oaks	273.7	29.4	51.0	55.6	48.3	42.9	24.1	13.5	5.6	3.4	...
Other red oaks	353.9	18.3	43.5	51.7	66.2	72.2	41.0	26.0	14.7	19.1	1.2
Hickory	297.6	30.5	62.3	70.0	65.2	41.4	14.7	4.8	5.6	3.1	...
Hard maple	45.3	6.6	7.9	8.7	8.1	7.2	4.6	1.6	...	0.6	...
Soft maple	26.9	4.8	3.1	6.3	4.9	3.7	3.0	1.3	...	...	...
Beech	55.8	1.8	4.5	6.3	6.0	8.2	8.2	5.1	7.1	6.4	2.2
Sweetgum	121.4	12.1	26.4	20.7	26.9	18.7	12.2	2.1	0.8	1.5	...
Tupelo-blackgum	35.5	8.5	6.6	7.5	5.4	4.5	1.5	0.8	0.2	0.6	...
Ash	35.4	4.3	7.6	5.9	5.1	6.1	4.3	1.2	0.5	...	0.4
Yellow-poplar	182.4	8.5	18.2	26.0	28.9	25.7	26.9	21.0	9.9	15.1	2.1
Black walnut	10.2	0.5	1.0	3.8	2.0	...	1.9	1.0	...	...	...
Other hardwoods	98.3	13.7	20.8	15.3	11.3	10.2	8.3	6.8	4.1	6.6	1.3
Total hardwoods	2368.1	186.3	345.3	426.4	437.2	408.9	254.0	145.3	76.1	78.4	10.2
All species	2529.1	220.7	386.2	457.9	465.5	427.2	259.4	147.2	76.6	78.4	10.2

Table 13–*Volume of growing stock in the saw-log portion of sawtimber*[1] *trees on timberland by species and diameter class, West-Central Tennessee Counties, 1989*

Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
		Diameter class (inches at breast height)							
	Million cubic feet								
Shortleaf-loblolly pine	51.6	18.5	17.9	11.2	3.2	0.8	...	...	...
Other yellow pines	8.1	1.7	2.5	2.8	1.1	...	...	...	...
Cypress	0.7	...	...	...	...	0.2	0.4	...	...
Other softwoods	12.2	4.5	4.3	2.4	0.4	0.6	...	...	...
Total softwoods	72.6	24.6	24.7	16.5	4.7	1.6	0.4	...	...
Select white oaks	369.6	...	100.2	120.3	74.6	41.2	20.1	12.5	0.7
Select red oaks	63.4	...	14.8	16.4	11.7	9.6	3.6	5.8	1.5
Other white oaks	107.8	...	35.1	35.0	19.4	10.9	4.4	3.0	...
Other red oaks	194.9	...	49.5	59.4	35.0	22.1	12.0	16.0	0.9
Hickory	105.6	...	48.2	34.0	12.0	3.7	5.1	2.5	...
Hard maple	16.3	...	5.9	5.5	3.5	1.1	...	0.4	...
Soft maple	9.5	...	3.3	2.7	2.5	1.0	...	...	...
Beech	34.4	...	4.3	6.4	7.0	4.0	5.5	5.4	1.9
Sweetgum	48.7	...	19.0	15.3	10.5	1.9	0.8	1.2	...
Tupelo-blackgum	10.3	...	4.1	3.8	1.1	0.6	0.2	0.5	...
Ash	13.5	...	3.3	4.8	3.6	0.9	0.5	...	0.4
Yellow-poplar	107.1	...	20.5	21.1	22.8	18.7	8.8	13.8	1.5
Black walnut	3.7	...	1.4	...	1.5	0.8	...	...	...
Other hardwoods	38.4	...	7.5	8.1	7.0	5.4	3.5	5.7	1.1
Total hardwoods	1123.1	...	317.2	332.9	212.1	121.8	64.4	66.9	7.9
All species	1195.7	24.6	341.9	349.3	216.8	123.5	64.8	66.9	7.9

[1] That part of the bole of sawtimber trees between a 1-foot stump and saw-log top.

Table 14–*Volume of sawtimber on timberland by species and diameter class, West-Central Tennessee Counties, 1989*

Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
		Diameter class (inches at breast height)							
	Million board feet								
Shortleaf-loblolly pine	305.8	99.5	110.1	69.9	21.1	5.3	...	...	...
Other yellow pines	43.3	8.8	13.4	15.1	6.0	...	...	...	...
Cypress	3.1	...	...	...	...	0.9	2.2	...	...
Other softwoods	63.1	22.8	22.1	13.2	1.9	3.2	...	...	...
Total softwoods	415.2	131.0	145.5	98.2	29.0	9.3	2.2	...	...
Select white oaks	2149.8	...	546.3	690.9	447.1	252.7	129.5	79.0	4.3
Select red oaks	368.6	...	82.7	94.4	68.3	59.4	18.8	35.8	9.2
Other white oaks	621.1	...	191.7	201.1	115.3	67.9	26.9	18.1	...
Other red oaks	1143.5	...	268.8	340.8	208.3	137.1	76.3	106.5	5.6
Hickory	614.7	...	273.4	197.9	72.5	22.6	32.3	16.1	...
Hard maple	95.7	...	32.3	32.7	20.4	7.3	...	3.0	...
Soft maple	54.0	...	18.1	16.0	14.1	5.7	...	...	...
Beech	205.1	...	24.1	37.4	40.9	25.2	35.2	29.8	12.5
Sweetgum	280.4	...	108.6	91.3	59.9	10.1	3.5	7.0	...
Tupelo-blackgum	57.9	...	22.1	21.5	6.3	3.4	1.2	3.3	...
Ash	77.2	...	17.7	27.3	20.7	5.9	3.0	...	2.6
Yellow-poplar	639.0	...	115.9	120.8	136.3	115.1	54.4	85.9	10.7
Black walnut	20.9	...	7.2	...	8.8	4.9	...	...	...
Other hardwoods	221.5	...	41.3	47.0	40.4	31.4	20.1	33.5	7.9
Total hardwoods	6549.3	...	1749.9	1919.2	1259.2	748.7	401.3	417.9	52.9
All species	6964.5	131.0	1895.5	2017.4	1288.2	758.1	403.6	417.9	52.9

Table 15–*Volume of growing stock and sawtimber on timberland by county and species group, West-Central Tennessee Counties, 1989*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Benton	175.9	13.4	0.4	0.7	33.4	128.0	444.8	11.1	1.0	1.6	67.9	363.2
Decatur	206.5	17.8	3.0	3.9	45.0	136.9	672.3	78.6	10.1	11.7	124.2	447.7
Hardin	258.3	24.4	36.3	5.2	60.2	132.2	689.2	30.6	125.1	12.9	159.0	361.6
Hickman	345.6	8.1	4.8	0.7	56.0	276.0	906.3	29.1	6.7	3.2	164.2	703.1
Houston	113.9	...	...	0.5	21.7	91.8	359.3	...	...	1.6	60.0	297.6
Humphreys	272.4	...	1.7	1.8	43.4	225.5	783.6	...	8.4	4.4	116.9	653.9
Lawrence	173.3	...	...	...	44.1	129.3	481.0	...	...	...	149.0	331.9
Lewis	164.9	...	1.6	...	20.2	143.0	430.5	...	4.9	...	59.1	366.5
Perry	247.9	...	1.8	5.6	28.0	212.5	628.9	...	6.6	7.0	84.5	530.8
Stewart	236.4	...	...	6.2	63.1	167.0	770.5	...	...	22.0	177.5	571.0
Wayne	334.0	5.8	15.8	1.4	40.9	270.1	798.2	...	36.8	1.7	81.4	678.3
All counties	2529.1	69.5	65.5	26.1	455.9	1912.2	6964.5	149.4	199.7	66.2	1243.8	5305.5

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 16–*Volume of timber on timberland by class of timber and species group, West-Central Tennessee Counties, 1989*

		Softwood			Hardwood	
		Pine				
Class of timber	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet					
Sawtimber trees:						
Saw-log portion	1195.7	26.0	33.7	12.9	212.3	910.8
Upper-stem portion	300.1	5.2	5.7	2.3	51.4	235.6
Total	1495.8	31.2	39.4	15.2	263.7	1146.3
Poletimber trees	1033.3	38.4	26.0	10.9	192.2	765.8
All growing-stock trees	2529.1	69.5	65.5	26.1	455.9	1912.2
Rough trees:						
Sawtimber size	67.9	0.6	0.6	1.7	11.4	53.6
Poletimber size	91.2	0.2	0.6	1.4	21.3	67.6
Total	159.0	0.9	1.2	3.1	32.7	121.1
Rotten trees:						
Sawtimber size	38.8	...	...	0.8	6.9	31.1
Poletimber size	2.6	...	...	...	1.0	1.6
Total	41.4	...	...	0.8	8.0	32.7
Salvable dead trees:						
Sawtimber size	8.8	...	...	...	0.5	8.3
Poletimber size	8.7	...	...	...	0.7	8.0
Total	17.5	...	...	...	1.2	16.3
All classes	2747.1	70.4	66.7	29.9	497.8	2082.4

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 17–*Volume of live trees and growing stock on timberland by ownership class and species group, West-Central Tennessee Counties, 1989*

	Live trees						Growing stock					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet											
Other public	206.4	...	...	7.8	29.0	169.6	191.4	...	...	7.4	24.4	159.6
Forest industry	464.0	21.2	6.6	3.5	82.9	349.8	434.8	20.6	6.3	3.3	79.6	325.0
Forest industry-leased	3.6	3.3	...	...	...	0.3	3.3	3.1	...	...	...	0.1
Other private	2055.6	45.8	60.1	18.6	384.7	1546.3	1899.7	45.8	59.2	15.4	351.9	1427.4
All ownerships	2729.6	70.4	66.7	29.9	496.6	2066.0	2529.1	69.5	65.5	26.1	455.9	1912.2

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 18–*Average net annual growth of growing stock and sawtimber on timberland by county and species group, West-Central Tennessee Counties, 1989*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Benton	10.0	0.6	0.3	0.1	2.3	6.7	30.3	0.6	0.5	0.2	3.4	25.6
Decatur	9.7	1.0	...	0.2	2.7	5.9	39.2	7.0	...	0.2	7.2	24.9
Hardin	12.0	3.4	0.6	0.2	2.5	5.3	37.8	10.2	2.9	0.2	7.6	16.9
Hickman	7.2	...	0.1	0.1	1.5	5.6	34.9	0.5	0.3	0.3	5.0	28.7
Houston	3.7	...	...	0.1	0.9	2.7	15.7	...	...	0.2	3.8	11.7
Humphreys	8.1	...	0.1	...	2.0	6.0	34.1	...	0.7	-0.3	7.1	26.6
Lawrence	5.5	...	...	...	1.5	4.0	22.3	...	0.3	...	7.6	14.4
Lewis	6.4	...	0.1	...	0.7	5.6	23.8	...	0.1	...	3.0	20.7
Perry	11.2	...	0.1	0.2	1.6	9.3	43.3	...	0.7	0.7	7.5	34.4
Stewart	8.0	...	...	...	2.9	5.1	31.4	...	...	-0.1	11.3	20.2
Wayne	9.3	0.3	1.1	0.1	1.3	6.5	35.6	1.2	1.1	...	3.9	29.3
All counties	91.0	5.4	2.3	0.8	19.9	62.7	348.3	19.5	6.6	1.5	67.4	253.3

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 19–*Average net annual removals of growing stock and sawtimber on timberland by county and species group, West-Central Tennessee Counties, 1989*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						Million board feet					
Benton	1.9	0.1	0.6	...	...	1.2	6.3	0.4	0.9	...	...	5.0
Decatur	2.9	...	...	...	0.6	2.3	12.8	...	...	...	2.3	10.5
Hardin	6.1	1.7	1.6	...	0.5	2.3	26.5	4.7	9.3	...	2.0	10.6
Hickman	5.5	...	...	0.1	0.9	4.5	22.2	...	...	0.3	2.8	19.1
Houston	...	...	...	...	...	...	...	...	...	...	...	...
Humphreys	3.2	...	...	0.1	0.4	2.8	12.8	...	...	...	1.6	11.3
Lawrence	5.4	...	0.5	...	1.3	3.5	21.1	...	1.1	...	6.9	13.1
Lewis	3.5	...	0.1	...	0.1	3.2	8.3	...	0.5	...	0.5	7.3
Perry	4.9	...	...	...	0.8	4.1	20.8	...	...	...	3.4	17.4
Stewart	4.4	...	...	...	1.0	3.5	22.2	...	...	...	4.2	18.0
Wayne	13.5	3.0	0.7	...	0.8	9.1	38.9	7.2	2.2	...	2.6	26.9
All counties	51.2	4.7	3.5	0.1	6.3	36.5	191.8	12.2	14.0	0.3	26.2	139.1

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 20–*Average net annual growth and average annual removals of growing stock on timberland by species, West-Central Tennessee Counties, 1989*

Species	Growth	Removals
	Million cubic feet	
Yellow pines	7.6	8.2
Other softwoods	0.8	0.1
Total softwoods	8.4	8.4
Select white-red oaks	30.2	16.3
Other white-red oaks	18.5	12.2
Hickory	6.5	6.3
Hard maple	2.6	0.9
Sweetgum	6.7	0.8
Ash-walnut-black cherry	2.4	0.4
Yellow-poplar	8.4	4.2
Other hardwoods	7.3	1.7
Total hardwoods	82.6	42.8
All species	91.0	51.2

Table 21–*Average net annual growth and average annual removals of sawtimber on timberland by species, West-Central Tennessee Counties, 1989*

Species	Growth	Removals
	Million board feet	
Yellow pines	26.2	26.2
Other softwoods	1.5	0.3
Total softwoods	27.7	26.5
Select white-red oaks	128.6	65.5
Other white-red oaks	79.6	44.9
Hickory	22.7	21.3
Hard maple	6.9	3.9
Sweetgum	18.3	2.2
Ash-walnut-black cherry	4.2	2.0
Yellow-poplar	34.7	18.7
Other hardwoods	25.6	6.7
Total hardwoods	320.6	165.3
All species	348.3	191.8

Table 22–*Average annual mortality of growing stock and sawtimber on timberland by species, West-Central Tennessee Counties, 1989*

Species	Growing stock	Sawtimber
	Million cubic feet	*Million board feet*
Yellow pines	2.0	4.2
Other softwoods	0.3	...
Total softwoods	2.3	4.2
Select white-red oaks	3.9	7.7
Other white-red oaks	9.1	22.4
Hickory	3.7	7.7
Hard maple	...	...
Sweetgum	0.8	1.0
Ash-walnut-black cherry	0.7	0.9
Yellow-poplar	1.4	4.3
Other hardwoods	3.1	7.0
Total hardwoods	22.7	51.0
All species	25.0	55.2

Table 23–*Average net annual growth and average annual removals of growing stock on timberland by ownership class and species group, West-Central Tennessee Counties, 1989*

	Growth						Removals					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet											
Other public	3.2	...	...	0.1	0.4	2.7	1.2	...	...	...	...	1.2
Forest industry	16.2	2.0	0.9	...	3.2	10.1	16.1	1.4	0.8	...	1.3	12.7
Forest industry-leased	0.2	0.2	...	...	...	...	...	...	...	...	...	...
Other private	71.4	3.1	1.4	0.7	16.3	49.9	33.9	3.3	2.7	0.1	5.0	22.6
All ownerships	91.0	5.4	2.3	0.8	19.9	62.7	51.2	4.7	3.5	0.1	6.3	36.5

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 24–*Average net annual growth and average annual removals of sawtimber on timberland by ownership class and species group, West-Central Tennessee Counties, 1989*

Ownership class	Growth						Removals					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million board feet											
Other public	14.1	...	...	-0.2	2.4	11.9	6.1	...	...	...	...	6.1
Forest industry	56.5	2.5	0.8	0.4	12.7	40.0	50.1	4.4	2.9	...	4.3	38.5
Forest industry-leased	0.8	0.8	...	...	...	...	...	...	...	...	...	...
Other private	276.8	16.2	5.8	1.2	52.2	201.3	135.6	7.9	11.1	0.3	21.9	94.5
All ownerships	348.3	19.5	6.6	1.5	67.4	253.3	191.8	12.2	14.0	0.3	26.2	139.1

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 25–*Volume of sawtimber on timberland by species and tree grade, West-Central Tennessee Counties, 1989*

Species	All grades	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
	Million board feet					
Yellow pines	349.0	75.3	19.5	250.8	...	3.5
Cypress	3.1	2.2	...	...	...	0.9
Redcedar	63.1	61.6	...	...	...	1.5
Total softwoods	415.2	139.1	19.5	250.8	...	5.9
Select white-red oaks	2518.3	180.1	513.8	1386.1	356.3	82.1
Other white-red oaks	1764.7	81.5	277.8	1013.7	315.1	76.5
Hickory	614.7	9.6	79.3	373.2	108.7	43.9
Hard maple	95.7	...	...	59.3	30.5	5.9
Sweetgum	280.4	4.4	51.8	165.4	37.6	21.2
Tupelo and blackgum	57.9	...	10.8	32.2	10.9	3.9
Ash-walnut-black cherry	112.5	8.0	40.2	46.2	13.4	4.7
Yellow-poplar	639.0	73.7	142.1	277.8	115.5	29.9
Other hardwoods	466.1	8.7	65.9	173.8	156.0	61.7
Total hardwoods	6549.3	366.1	1181.6	3527.8	1144.0	329.7
All species	6964.5	505.2	1201.1	3778.5	1144.0	335.6

Supplemental Tables 26-40

Table 26–*Area of timberland by stand age, forest type group and type of regeneration, West-Central Tennessee Counties, 1989*

Stand age class	Pine		Oak-pine		Other hardwood types	
	Artificial	Natural	Artificial	Natural	Artificial	Natural
	Thousand acres					
1-10	29.6	...	19.1	...	12.6	23.5
11-20	25.4	...	...	...	...	...
21-30	9.6	...	4.8	...	...	17.9
31-40	11.8	...	...	...	...	...
41-50	5.6	...	...	...	...	...
>50	...	...	...	...	...	...
Mixed	6.4	44.7	11.2	58.8	...	2052.8
Total	88.4	44.7	35.0	58.8	12.6	2094.2

Table 27–*Volume of softwood growing stock on timberland by forest type, West-Central Tennessee Counties, 1989*

County	Total	Forest type group				
		Loblolly-shortleaf pine				
		Planted	Natural	Oak-pine	Oak-hickory	Oak-gum cypress
	Million cubic feet					
Benton	14.5	12.0	...	2.0	0.4	...
Decatur	24.7	17.8	...	3.3	3.6	...
Hardin	66.0	21.9	14.7	20.6	7.8	1.0
Hickman	13.7	8.9	...	...	4.8	...
Houston	0.5	...	...	...	0.5	...
Humphreys	3.5	...	...	...	3.5	...
Lawrence	...	...	...	...	...	...
Lewis	1.6	...	...	...	1.6	...
Perry	7.4	...	2.9	0.4	4.2	...
Stewart	6.2	...	5.4	...	0.8	...
Wayne	23.0	5.1	6.9	3.2	7.9	...
All counties	161.1	65.6	29.8	29.5	35.1	1.0

Table 28–*Volume of hardwood growing stock on timberland by forest type, West-Central Tennessee Counties, 1989*

County	Total	Forest type group: Loblolly-shortleaf pine: Planted	Natural	Oak-pine	Oak-hickory	Oak-gum-cypress
	Million cubic feet					
Benton	161.4	0.4	...	1.9	157.5	1.6
Decatur	181.8	6.7	...	4.5	161.4	9.2
Hardin	192.4	2.2	4.6	21.9	115.4	48.2
Hickman	332.0	0.4	...	...	331.6	...
Houston	113.4	...	...	...	113.4	...
Humphreys	268.8	...	...	...	268.8	...
Lawrence	173.3	...	...	...	162.0	11.3
Lewis	163.2	...	...	...	147.9	15.3
Perry	240.5	...	1.8	2.2	232.0	4.5
Stewart	230.1	...	3.7	...	226.4	...
Wayne	311.0	...	2.8	5.5	298.6	4.1
All counties	2368.1	9.7	12.9	36.1	2215.3	94.2

Table 29–*Volume of softwood growing stock in the saw-log portion of sawtimber trees on timberland by forest type, West-Central Tennessee Counties, 1989*

County	Total	Forest type group: Loblolly-shortleaf pine: Planted	Natural	Oak-pine	Oak-hickory	Oak-gum-cypress
	Million cubic feet					
Benton	2.7	2.2	...	0.3	0.2	...
Decatur	16.1	12.3	...	1.9	1.9	...
Hardin	28.7	5.9	9.7	9.1	3.3	0.7
Hickman	7.4	6.2	...	...	1.2	...
Houston	0.3	...	...	...	0.3	...
Humphreys	2.4	...	...	...	2.4	...
Lawrence	...	...	...	...	...	...
Lewis	0.7	...	...	...	0.7	...
Perry	2.6	...	1.0	...	1.6	...
Stewart	4.3	...	3.9	...	0.4	...
Wayne	7.4	...	4.1	0.4	2.9	...
All counties	72.6	26.5	18.7	11.8	15.0	0.7

Table 30–*Volume of hardwood growing stock in the saw-log portion of sawtimber trees on timberland by forest type, West-Central Tennessee Counties, 1989*

County	Total	Forest type group				
		Loblolly-shortleaf pine				
		Planted	Natural	Oak-pine	Oak-hickory	Oak-gum-cypress
	Million cubic feet					
Benton	75.2	...	...	0.4	74.8	...
Decatur	96.2	1.6	...	2.5	85.7	6.3
Hardin	85.7	0.6	1.3	8.7	51.3	23.8
Hickman	147.6	...	...	...	147.6	...
Houston	60.6	...	...	...	60.6	...
Humphreys	132.9	...	...	...	132.9	...
Lawrence	88.2	...	...	...	78.6	9.7
Lewis	72.8	...	...	...	63.7	9.1
Perry	103.1	...	...	0.3	100.3	2.5
Stewart	125.4	...	2.4	...	123.1	...
Wayne	135.4	...	1.0	2.2	130.0	2.3
All counties	1123.1	2.2	4.8	14.0	1048.6	53.6

Table 31–*Volume of timber on timberland by county, class of timber and species group, West-Central Tennessee Counties, 1989*

County	All classes	Growing stock		Rough		Rotten	
		Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
	Million cubic feet						
Benton	192.8	14.5	161.4	0.1	12.6	...	4.2
Decatur	217.8	24.7	181.8	0.3	7.7	0.3	2.9
Hardin	284.1	66.0	192.4	2.0	16.1	0.2	7.4
Hickman	380.4	13.7	332.0	0.8	28.6	...	5.4
Houston	122.3	0.5	113.4	...	7.6	...	0.8
Humphreys	289.3	3.5	268.8	0.3	13.1	0.2	3.3
Lawrence	184.9	...	173.3	...	9.6	...	1.9
Lewis	176.9	1.6	163.2	...	9.4	...	2.7
Perry	270.3	7.4	240.5	0.6	16.5	...	5.3
Stewart	257.1	6.2	230.1	0.7	18.1	...	1.9
Wayne	353.9	23.0	311.0	0.3	14.6	...	4.9
All counties	2729.6	161.1	2368.1	5.2	153.9	0.8	40.7

Table 32–*Number of live trees on timberland by detailed species and diameter class, West-Central Tennessee Counties, 1989*

		Diameter class (inches at breast height)											
Species	All classes	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Shortleaf pine	9229	1456	2755	1994	1577	700	400	268	57	23	...	...	...
Loblolly pine	42364	15145	11869	9152	4177	1259	563	154	44	...	...	...	...
Virginia pine	3666	438	526	1541	508	257	174	172	50	...	...	...	...
Redcedar	37919	22931	9580	3416	752	587	419	126	45	62	...	...	...
Cypress	66	...	...	...	49	...	...	...	...	9	8	...	...
Total softwoods	93245	39970	24729	16103	7065	2803	1557	720	195	95	8	...	...
Select white oaks	114392	27927	23187	18328	13741	11990	8410	6095	2756	1191	469	278	21
Select red oaks	15771	5139	2111	2049	1948	1570	1108	871	455	315	89	103	15
Other white oaks	69949	19739	13676	12765	9750	6045	3635	2455	1094	453	215	124	...
Other red oaks	51642	17272	3774	6979	7662	5322	4502	3347	1411	693	347	322	11
Other hickories	138738	69410	28831	15064	11605	7130	3961	1859	512	171	131	65	...
Persimmon	14027	11974	1028	701	69	172	83	...	...	...	...	...	...
Hard maple	48959	35283	6634	3063	1667	950	732	364	173	56	9	27	...
Soft maple	46597	33909	7681	2628	799	818	471	143	72	33	8	23	9
Boxelder	5996	1687	2749	475	340	443	93	61	132	15	...	...	...
Beech	16921	9929	1757	1317	1046	781	519	487	272	250	194	294	74
Sweetgum	47073	24637	8699	5172	4471	1656	1307	666	350	71	20	23	...
Blackgum	156008	130050	18335	4500	1400	845	407	286	85	48	28	24	...
Other gums/tupelos	58	...	...	...	58	...	...	...	...	...	...	...	...
White ash	15365	12125	1047	866	736	188	177	175	29	...	19	...	3
Other ashes	16244	7826	5731	1111	748	421	173	72	122	40	...	...	...
Sycamore	2144	...	579	315	294	390	32	141	154	66	71	92	8
Basswood	52	...	...	...	...	45	...	...	...	...	...	7	...
Yellow-poplar	51362	28845	9749	3627	2913	2111	1538	1040	722	416	177	210	14
Magnolia	192	...	...	116	76	...	...	...	...	...	...	...	...
Willow	1806	1726	...	...	49	...	...	19	...	12	...	...	...
Black walnut	3702	1093	1155	375	256	438	239	...	72	55	11	7	...
Black cherry	27487	17430	6023	2203	1334	310	38	50	36	42	11	9	...
American elm	11692	10574	...	451	256	146	77	95	33	37	11	12	...
Other elms	31649	24613	3219	2004	1052	331	327	43	30	13	18	...	...
River birch	532	...	494	...	...	37	...	...	...	...	...	...	...
Hackberry	6262	2815	1542	880	506	186	101	120	73	23	11	4	...
Black locust	1011	...	575	374	...	46	...	...	15	...	...	...	...
Other locusts	316	...	...	103	203	...	...	...	...	10	...	...	...
Sassafras	32773	27949	2884	1267	198	291	123	62	...	...	...	...	...
Dogwood	103556	79382	21295	2672	157	51	...	...	...	...	...	...	...
Other commercial	5272	3730	1047	365	70	...	59	...	...	...	...	...	...
Total hardwoods	1037546	605064	173805	89771	63404	42711	28113	18453	8598	4008	1839	1625	155
Noncommercial	216011	150465	48876	12789	2966	663	210	23	19	...	...	...	...
All species	1346803	795498	247411	118664	73434	46178	29880	19196	8812	4103	1847	1625	155

Table 33—*Number of growing-stock trees on timberland by detailed species and diameter class, West-Central Tennessee Counties, 1989*

Species	All classes	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees										
Shortleaf pine	4940	1994	1522	700	376	268	57	23	...	...	...
Loblolly pine	15314	9152	4177	1224	563	154	44	...	...	...	...
Virginia pine	2377	1450	346	210	174	147	50	...	...	...	...
Redcedar	4461	2815	620	526	335	126	15	24	...	...	...
Cypress	66	...	49	...	...	...	...	9	8	...	...
Total softwoods	27159	15411	6714	2660	1449	695	165	57	8	...	...
Select white oaks	60756	17163	13468	11773	7858	5968	2674	1165	439	242	5
Select red oaks	8063	1778	1877	1542	1077	849	441	301	89	96	12
Other white oaks	33681	11920	9355	5632	3155	2104	912	399	127	79	...
Other red oaks	28748	6521	7319	5026	4086	3163	1383	662	292	287	11
Other hickories	37822	13941	11152	6724	3607	1652	461	133	110	43	...
Persimmon	747	492	...	172	83	...	...	...	...	...	...
Hard maple	6119	2671	1566	869	528	297	135	40	...	12	...
Soft maple	2829	1381	407	543	290	143	43	22	...	...	...
Boxelder	661	235	115	140	35	39	82	15	...	...	...
Beech	3772	784	982	661	350	330	272	126	147	97	23
Sweetgum	12765	4463	4388	1608	1241	642	334	46	20	23	...
Blackgum	6792	4030	1275	772	378	244	52	22	10	9	...
White ash	1962	769	650	188	140	175	29	...	10	...	3
Other ashes	2088	782	572	343	173	72	122	25	...	...	...
Sycamore	1440	315	294	308	32	124	139	66	61	92	8
Yellow-poplar	12036	3327	2712	2077	1447	980	706	416	167	188	14
Magnolia	76	...	76	...	...	...	...	...	...	...	...
Willow	80	...	49	...	...	19	...	12	...	...	...
Black walnut	1185	375	131	401	179	...	72	26	...	...	...
Black cherry	2805	1264	1132	266	38	22	36	28	11	9	...
American elm	887	308	256	146	46	72	15	26	11	7	...
Other elms	3409	1750	921	331	327	43	15	13	10	...	...
River birch	37	...	...	37	...	...	...	...	...	...	...
Hackberry	1370	495	506	146	69	74	56	23	...	...	...
Black locust	272	226	...	46	...	...	...	...	...	...	...
Other locusts	242	103	130	...	...	...	...	10	...	...	...
Sassafras	933	609	71	128	64	62	...	...	...	...	...
Dogwood	969	813	157	...	...	...	...	...	...	...	...
Other commercial	246	148	70	...	27	...	...	...	...	...	...
Total hardwoods	232793	76661	59629	39876	25231	17074	7979	3575	1504	1187	77
All species	259952	92072	66343	42536	26680	17769	8144	3632	1513	1187	77

Table 34–*Volume of growing-stock trees on timberland by detailed species and diameter class, West-Central Tennessee Counties, 1989*

		Diameter class (inches at breast height)									
Species	All classes	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet										
Shortleaf pine	43.6	6.2	10.6	9.0	7.2	7.6	2.1	0.9	...	...	...
Loblolly pine	77.2	18.6	24.7	14.4	13.1	4.8	1.6	...	...	...	...
Virginia pine	14.2	2.8	1.6	2.5	3.0	3.1	1.2	...	...	...	...
Redcedar	25.0	6.9	3.7	5.6	5.0	2.8	0.4	0.7	...	...	...
Cypress	1.0	...	0.3	...	...	...	...	0.3	0.5	...	...
Total softwoods	161.1	34.4	40.9	31.5	28.2	18.3	5.4	1.9	0.5	...	...
Select white oaks	718.2	43.3	81.1	129.9	138.8	147.8	89.0	48.6	23.5	15.1	1.1
Select red oaks	113.3	4.2	11.4	18.6	20.3	20.4	14.2	11.5	4.0	6.8	1.9
Other white oaks	273.7	29.4	51.0	55.6	48.3	42.9	24.1	13.5	5.6	3.4	...
Other red oaks	353.9	18.3	43.5	51.7	66.2	72.2	41.0	26.0	14.7	19.1	1.2
Other hickories	297.6	30.5	62.3	70.0	65.2	41.4	14.7	4.8	5.6	3.1	...
Persimmon	4.2	1.1	...	1.6	1.6	...	...	...	...	...	...
Hard maple	45.3	6.6	7.9	8.7	8.1	7.2	4.6	1.6	...	0.6	...
Soft maple	21.5	4.2	2.4	5.4	4.5	3.0	1.2	0.7	...	...	...
Boxelder	5.4	0.5	0.7	0.9	0.4	0.6	1.8	0.5	...	...	...
Beech	55.8	1.8	4.5	6.3	6.0	8.2	8.2	5.1	7.1	6.4	2.2
Sweetgum	121.4	12.1	26.4	20.7	26.9	18.7	12.2	2.1	0.8	1.5	...
Blackgum	35.5	8.5	6.6	7.5	5.4	4.5	1.5	0.8	0.2	0.6	...
White ash	16.0	2.0	3.8	2.2	2.2	4.1	0.8	...	0.5	...	0.4
Other ashes	19.4	2.3	3.8	3.7	2.9	1.9	3.5	1.2	...	...	...
Sycamore	27.6	1.0	1.9	3.3	0.5	3.4	4.6	2.4	3.2	6.0	1.3
Yellow-poplar	182.4	8.5	18.2	26.0	28.9	25.7	26.9	21.0	9.9	15.1	2.1
Magnolia	0.5	...	0.5	...	...	...	...	...	...	...	...
Willow	1.1	...	0.3	...	...	0.4	...	0.4	...	...	...
Black walnut	10.2	0.5	1.0	3.8	2.0	...	1.9	1.0	...	...	...
Black cherry	15.0	2.7	6.9	2.0	0.5	0.4	1.1	0.9	0.2	0.3	...
American elm	8.6	0.7	1.6	2.0	0.8	1.1	0.5	1.2	0.4	0.3	...
Other elms	20.7	3.6	5.4	3.3	5.7	1.4	0.4	0.5	0.3	...	...
River birch	0.4	...	...	0.4	...	...	...	...	...	...	...
Hackberry	9.8	1.0	2.2	1.2	0.7	2.2	1.6	0.9	...	...	...
Black locust	0.9	0.5	...	0.3	...	...	...	...	...	...	...
Other locusts	1.6	0.4	0.8	...	...	...	...	0.4	...	...	...
Sassafras	5.2	1.4	0.4	1.2	1.1	1.3	...	...	...	...	...
Dogwood	1.5	1.2	0.3	...	...	...	...	...	...	...	...
Other commercial	1.1	0.2	0.6	...	0.4	...	...	...	...	...	...
Total hardwoods	2368.1	186.3	345.3	426.4	437.2	408.9	254.0	145.3	76.1	78.4	10.2
All species	2529.1	220.7	386.2	457.9	465.5	427.2	259.4	147.2	76.6	78.4	10.2

Table 35–*Volume of growing stock in the saw-log portion of sawtimber trees on timberland by detailed species and diameter class, West-Central Tennessee Counties, 1989*

Species	All classes	Diameter class (inches at breast height)							
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet								
Shortleaf pine	22.9	7.2	6.4	6.8	1.8	0.8	...	...	...
Loblolly pine	28.7	11.3	11.6	4.5	1.4	...	...	...	...
Virginia pine	8.1	1.7	2.5	2.8	1.1	...	...	...	...
Redcedar	12.2	4.5	4.3	2.4	0.4	0.6	...	...	...
Cypress	0.7	...	...	...	...	0.2	0.4	...	...
Total softwoods	72.6	24.6	24.7	16.5	4.7	1.6	0.4	...	...
Select white oaks	369.6	...	100.2	120.3	74.6	41.2	20.1	12.5	0.7
Select red oaks	63.4	...	14.8	16.4	11.7	9.6	3.6	5.8	1.5
Other white oaks	107.8	...	35.1	35.0	19.4	10.9	4.4	3.0	...
Other red oaks	194.9	...	49.5	59.4	35.0	22.1	12.0	16.0	0.9
Other hickories	105.6	...	48.2	34.0	12.0	3.7	5.1	2.5	...
Persimmon	1.1	...	1.1	...	...	...	...	...	...
Hard maple	16.3	...	5.9	5.5	3.5	1.1	...	0.4	...
Soft maple	6.9	...	3.0	2.4	1.0	0.5	...	...	...
Boxelder	2.5	...	0.3	0.4	1.5	0.4	...	...	...
Beech	34.4	...	4.3	6.4	7.0	4.0	5.5	5.4	1.9
Sweetgum	48.7	...	19.0	15.3	10.5	1.9	0.8	1.2	...
Blackgum	10.3	...	4.1	3.8	1.1	0.6	0.2	0.5	...
White ash	6.3	...	1.4	3.3	0.7	...	0.5	...	0.4
Other ashes	7.2	...	1.9	1.4	2.9	0.9	...	...	...
Sycamore	18.1	...	0.2	2.8	4.1	2.0	2.9	5.1	1.1
Yellow-poplar	107.1	...	20.5	21.1	22.8	18.7	8.8	13.8	1.5
Willow	0.7	...	...	0.3	...	0.3	...	...	...
Black walnut	3.7	...	1.4	...	1.5	0.8	...	...	...
Black cherry	2.5	...	0.4	0.3	0.8	0.7	0.1	0.3	...
American elm	3.4	...	0.6	0.8	0.4	1.0	0.3	0.3	...
Other elms	5.8	...	3.7	1.1	0.3	0.4	0.2	...	...
Hackberry	4.3	...	0.5	1.8	1.4	0.6	...	...	...
Other locusts	0.3	...	...	...	...	0.3	...	...	...
Sassafras	1.9	...	0.7	1.1	...	...	...	...	...
Other commercial	0.3	...	0.3	...	...	...	...	...	...
Total hardwoods	1123.1	...	317.2	332.9	212.1	121.8	64.4	66.9	7.9
All species	1195.7	24.6	341.9	349.3	216.8	123.5	64.8	66.9	7.9

Table 36–*Volume of timber on timberland by species and class of timber, West-Central Tennessee Counties, 1989*

Species	All live	Growing stock	Rough	Rotten
	Million cubic feet			
Shortleaf pine	44.0	43.6	0.5	...
Loblolly pine	77.5	77.2	0.3	...
Virginia pine	15.5	14.2	1.3	...
Redcedar	28.9	25.0	3.1	0.8
Cypress	1.0	1.0	...	...
Total softwoods	167.0	161.1	5.2	0.8
Select white oaks	736.4	718.2	16.6	1.6
Select red oaks	116.2	113.3	2.3	0.6
Other white oaks	296.1	273.7	16.9	5.5
Other red oaks	367.8	353.9	9.5	4.4
Other hickories	312.5	297.6	11.7	3.1
Persimmon	5.1	4.2	0.9	...
Hard maple	52.4	45.3	6.6	0.5
Soft maple	30.3	21.5	7.2	1.6
Boxelder	9.7	5.4	3.9	0.4
Beech	79.7	55.8	7.7	16.2
Sweetgum	125.0	121.4	2.7	0.9
Blackgum	40.3	35.5	2.8	1.9
Other gums/tupelos	0.2	...	0.2	...
White ash	17.1	16.0	1.1	...
Other ashes	21.4	19.4	1.8	0.2
Sycamore	29.0	27.6	1.4	...
Basswood	0.5	...	0.2	0.3
Yellow-poplar	187.1	182.4	3.3	1.4
Magnolia	0.7	0.5	0.2	...
Willow	1.1	1.1	...	...
Black walnut	12.7	10.2	2.0	0.5
Black cherry	18.0	15.0	2.9	...
American elm	10.0	8.6	1.2	0.2
Other elms	22.1	20.7	1.2	0.2
River birch	0.4	0.4	...	...
Hackberry	12.8	9.8	2.6	0.4
Black locust	1.1	0.9	0.2	0.1
Other locusts	1.8	1.6	0.2	...
Sassafras	8.4	5.2	2.6	0.6
Dogwood	3.6	1.5	2.1	...
Other commercial	1.5	1.1	0.3	0.1
Total hardwoods	2521.1	2368.1	112.4	40.7
Noncommercial	41.5	...	41.5	...
All species	2729.6	2529.1	159.0	41.4

Table 37–*Volume of sawtimber for tree grade 1 on timberland by detailed species and diameter class, West-Central Tennessee Counties, 1989*

Species	All classes	Diameter class (inches at breast height)							
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Shortleaf pine	20.0	7.6	8.3	4.2	...	...	...	...	...
Loblolly pine	55.3	6.4	34.2	10.9	3.7	...	...	...	...
Redcedar	61.6	22.8	22.1	13.2	1.9	1.7	...	...	...
Cypress	2.2	...	...	...	...	...	2.2	...	...
Total softwoods	139.1	36.7	64.6	28.3	5.6	1.7	2.2	...	...
Select white oaks	158.0	...	...	...	45.5	53.3	42.9	16.4	...
Select red oaks	22.1	...	...	...	...	7.4	7.0	3.6	4.1
Other white oaks	30.8	...	...	...	3.5	18.2	2.8	6.4	...
Other red oaks	50.7	...	...	...	6.8	25.3	14.0	4.5	...
Other hickories	9.6	...	...	...	5.5	...	...	4.1	...
Sweetgum	4.4	...	...	...	4.4	...	...	...	...
White ash	3.0	...	...	...	...	...	3.0	...	...
Sycamore	6.8	...	...	...	...	...	...	6.8	...
Yellow-poplar	73.7	...	...	...	13.1	21.8	10.5	25.4	2.9
Willow	2.0	...	...	...	...	2.0	...	...	...
Black walnut	5.1	...	...	...	3.0	2.0	...	...	...
Total hardwoods	366.1	...	...	...	81.9	129.8	80.2	67.2	7.0
All species	505.2	36.7	64.6	28.3	87.5	131.5	82.4	67.2	7.0

Table 38–*Volume of sawtimber for tree grade 2 on timberland by detailed species and diameter class, West-Central Tennessee Counties, 1989*

Species	All classes	Diameter class (inches at breast height)							
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Shortleaf pine	9.7	5.8	0.6	...	3.3	...	...	...	...
Loblolly pine	9.8	5.4	2.7	...	1.8	...	...	...	...
Total softwoods	19.5	11.1	3.3	...	5.1	...	...	...	...
Select white oaks	460.3	...	...	175.4	148.0	81.5	28.6	22.5	4.3
Select red oaks	53.4	...	...	9.3	10.7	12.0	1.6	19.9	...
Other white oaks	91.5	...	...	42.9	34.2	14.5	...	...	...
Other red oaks	186.3	...	...	47.4	62.9	24.6	24.0	27.3	...
Other hickories	79.3	...	...	39.9	16.8	4.4	11.7	6.5	...
Boxelder	2.6	...	...	...	2.6	...	...	...	...
Beech	6.8	...	...	...	4.0	...	2.8	...	...
Sweetgum	51.8	...	...	29.4	18.3	2.3	1.8	...	...
Blackgum	10.8	...	...	4.8	2.0	0.7	...	3.3	...
White ash	12.0	...	...	9.2	2.8	...	...	...	...
Other ashes	20.8	...	...	1.9	13.0	5.9	...	...	...
Sycamore	46.5	...	...	8.6	8.1	6.1	5.8	10.0	7.9
Yellow-poplar	142.1	...	...	21.4	32.5	32.0	23.5	32.7	...
Black cherry	7.4	...	...	...	3.3	4.1	...	...	...
American elm	3.8	...	...	...	...	3.8	...	...	...
Other elms	4.5	...	...	2.6	1.9	...	...	...	...
Hackberry	1.7	...	...	...	...	1.7	...	...	...
Total hardwoods	1181.6	...	...	392.6	361.2	193.7	99.8	122.2	12.2
All species	1201.1	11.1	3.3	392.6	366.2	193.7	99.8	122.2	12.2

Table 39–*Volume of sawtimber for tree grade 3 on timberland by detailed species and diameter class, West-Central Tennessee Counties, 1989*

		Diameter class (inches at breast height)							
Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Shortleaf pine	102.8	25.1	26.2	37.7	8.5	5.3	...	...	...
Loblolly pine	106.6	49.2	36.5	17.1	3.8	...	...	...	...
Virginia pine	41.4	8.8	13.4	13.2	6.0	...	...	...	...
Total softwoods	250.8	83.1	76.1	68.0	18.3	5.3	...	...	...
Select white oaks	1179.9	...	427.8	396.3	199.9	100.3	37.7	17.8	...
Select red oaks	206.2	...	54.6	62.3	48.5	32.9	5.0	2.9	...
Other white oaks	368.7	...	156.9	129.3	47.6	20.3	14.6	...	...
Other red oaks	645.0	...	205.7	213.4	69.6	61.0	26.8	63.2	5.2
Other hickories	373.2	...	213.3	119.6	18.7	9.8	9.7	2.1	...
Persimmon	2.1	...	2.1	...	...	...	...	...	...
Hard maple	59.3	...	18.1	19.7	19.1	...	...	2.3	...
Soft maple	15.9	...	6.2	7.4	2.3	...	...	...	...
Boxelder	6.5	...	1.3	1.9	3.3	...	...	...	...
Beech	52.5	...	1.6	8.2	13.4	5.4	12.2	7.1	4.5
Sweetgum	165.4	...	83.6	41.0	33.9	5.6	...	1.3	...
Blackgum	32.2	...	17.4	9.5	2.6	2.7	...	...	...
White ash	10.5	...	4.8	3.1	...	...	...	...	2.6
Other ashes	18.3	...	7.8	6.3	4.3	...	...	...	...
Sycamore	42.2	...	1.2	6.9	14.4	5.0	8.9	5.9	...
Yellow-poplar	277.8	...	86.9	70.2	51.8	35.0	13.6	13.6	6.8
Willow	1.7	...	...	1.7	...	...	...	...	...
Black walnut	13.5	...	4.9	...	5.7	2.9	...	...	...
Black cherry	3.9	...	1.9	...	2.0	...	...	...	...
American elm	9.5	...	3.7	4.1	...	...	1.7	...	...
Other elms	21.6	...	17.3	4.3	...	...	...	...	...
Hackberry	14.7	...	1.3	6.7	4.3	2.4	...	...	...
Sassafras	5.6	...	3.8	1.8	...	...	...	...	...
Other commercial	1.4	...	1.4	...	...	...	...	...	...
Total hardwoods	3527.8	...	1323.8	1113.5	541.4	283.4	130.2	116.4	19.1
All species	3778.5	83.1	1399.9	1181.6	559.7	288.6	130.2	116.4	19.1

Table 40–*Volume of sawtimber for tree grade 4 on timberland by detailed species and diameter class, West-Central Tennessee Counties, 1989*

Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Select white oaks	288.0	...	111.9	101.1	42.6	12.3	12.4	7.7	...
Select red oaks	68.2	...	28.1	22.8	4.0	4.7	3.0	5.6	...
Other white oaks	89.4	...	27.1	21.0	21.1	12.2	5.7	2.4	...
Other red oaks	225.6	...	61.1	73.0	53.0	22.7	6.8	9.1	...
Other hickories	108.7	...	53.0	28.1	14.2	6.8	4.2	2.4	...
Hard maple	30.5	...	12.9	10.7	1.3	5.6	...	...	...
Soft maple	17.4	...	9.0	5.4	3.1	...	...	...	...
Boxelder	2.2	...	...	...	2.2	...	...	...	...
Beech	106.9	...	22.5	28.2	16.9	16.8	11.1	6.9	4.7
Sweetgum	37.6	...	15.7	18.2	...	...	...	3.7	...
Blackgum	10.9	...	4.7	6.2	...	...	...	...	...
White ash	7.7	...	2.4	5.3	...	...	...	...	...
Other ashes	2.7	...	2.7	...	...	...	...	...	...
Sycamore	5.1	...	...	...	...	...	...	5.1	...
Yellow-poplar	115.5	...	26.2	25.4	31.1	21.4	2.2	9.1	...
Black walnut	1.6	...	1.6	...	...	...	...	...	...
Black cherry	1.4	...	...	1.4	...	...	...	...	...
American elm	7.6	...	...	...	2.7	2.5	...	2.5	...
Other elms	5.4	...	3.9	...	...	...	1.6	...	...
Hackberry	7.8	...	1.1	4.5	2.1	...	...	...	...
Other locusts	1.9	...	...	...	...	1.9	...	...	...
Sassafras	1.7	...	...	1.7	...	...	...	...	...
Total hardwoods	1144.0	...	383.7	353.1	194.3	106.8	46.9	54.5	4.7
All species	1144.0	...	383.7	353.1	194.3	106.8	46.9	54.5	4.7

Diameter class (inches at breast height) applies to columns 9.0-10.9 through 29.0 & larger.

Graphics

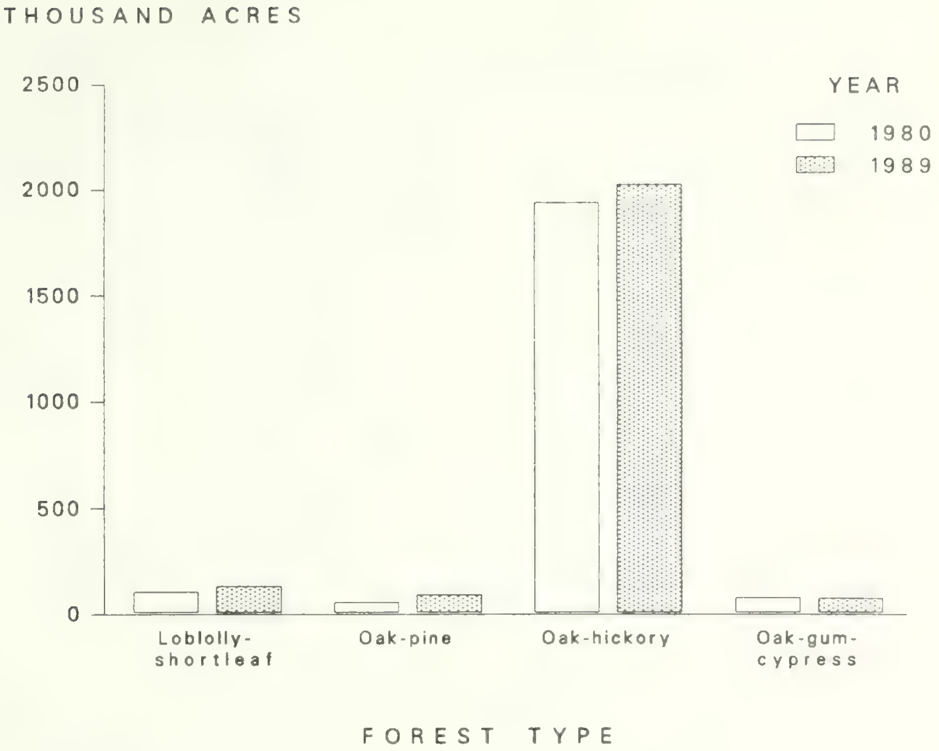

Figure 1.--Area of timberland by forest type, West-Central Tennessee, 1980 and 1989.

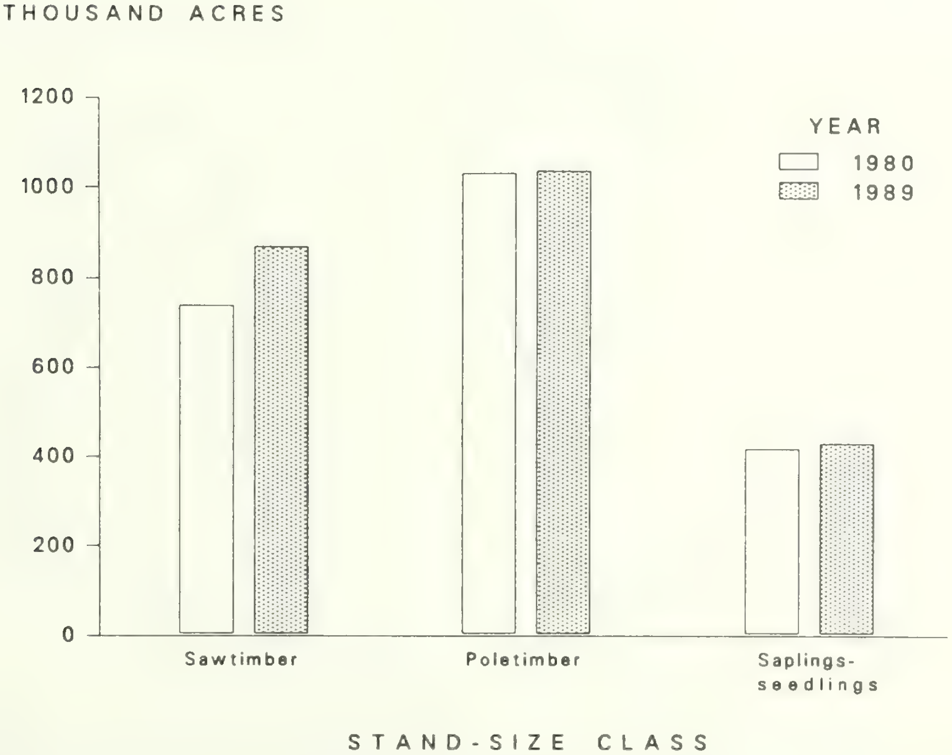

Figure 2.--Area of timberland by stand-size class, West-Central Tennessee, 1980 and 1989.

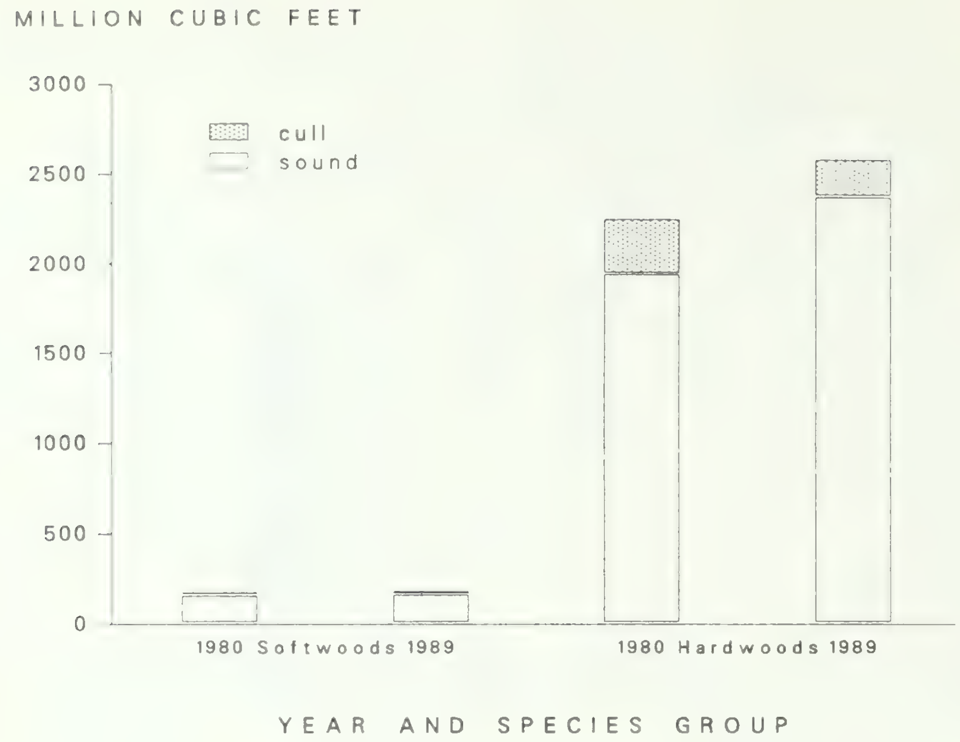

Figure 3.--Volume of timber on timberland by species group and class of timber, West-Central Tennessee, 1980 and 1989.

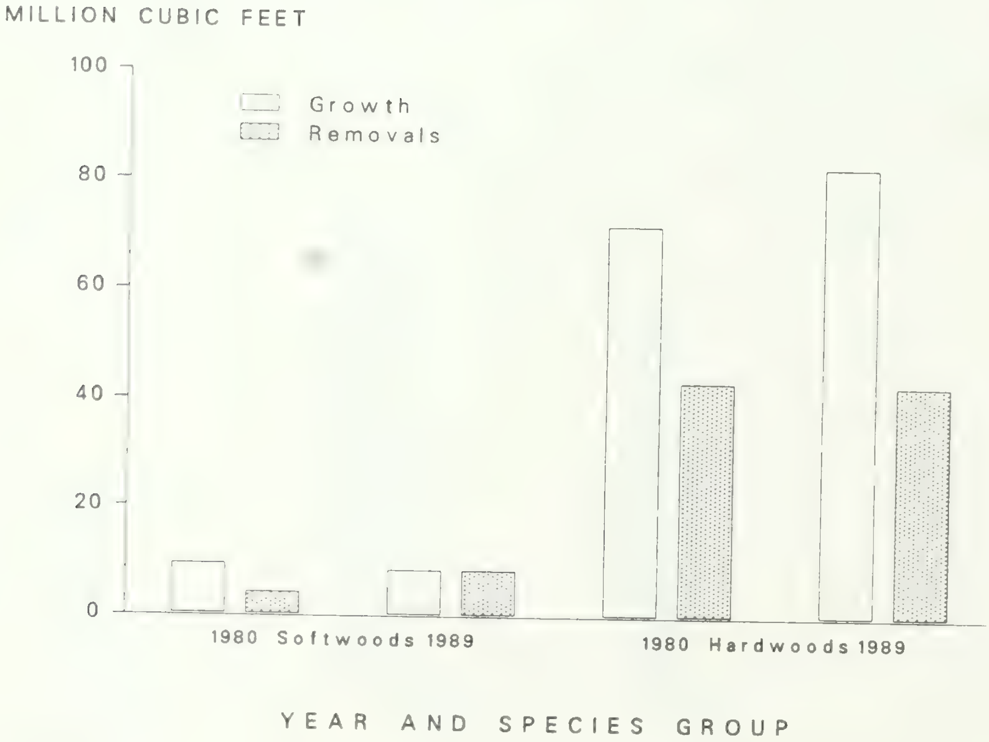

Figure 4.--Average net annual growth and average annual removals of growing stock on timberland by species group, West-Central Tennessee, 1980 and 1989.

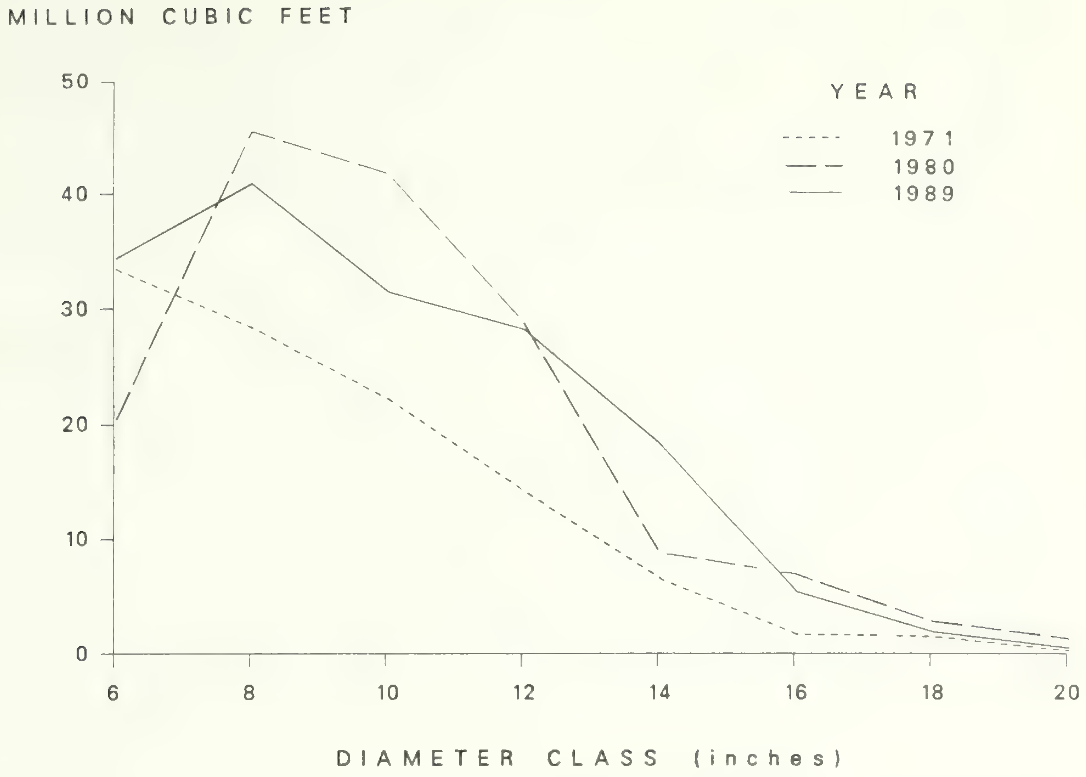

Figure 5.--Volume of softwood growing stock on timberland by diameter class, West-Central Tennessee, 1971, 1980, and 1989.

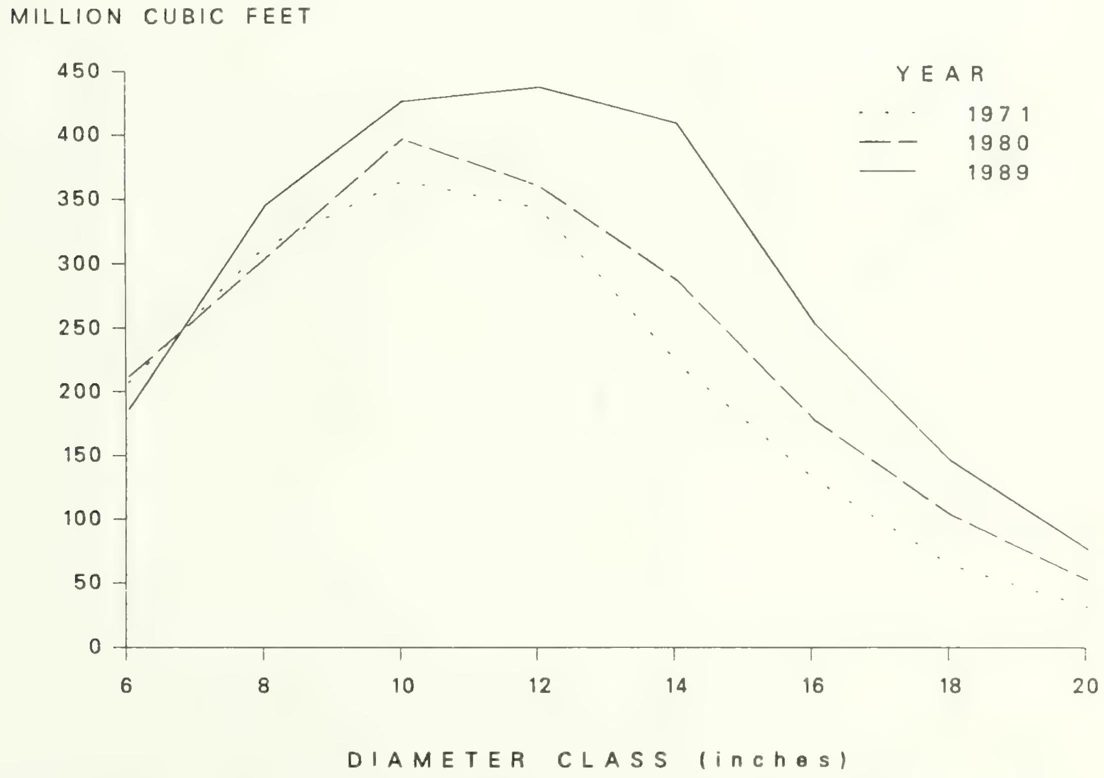

Figure 6.--Volume of hardwood growing stock on timberland by diameter class, West-Central Tennessee, 1971, 1980, and 1989.

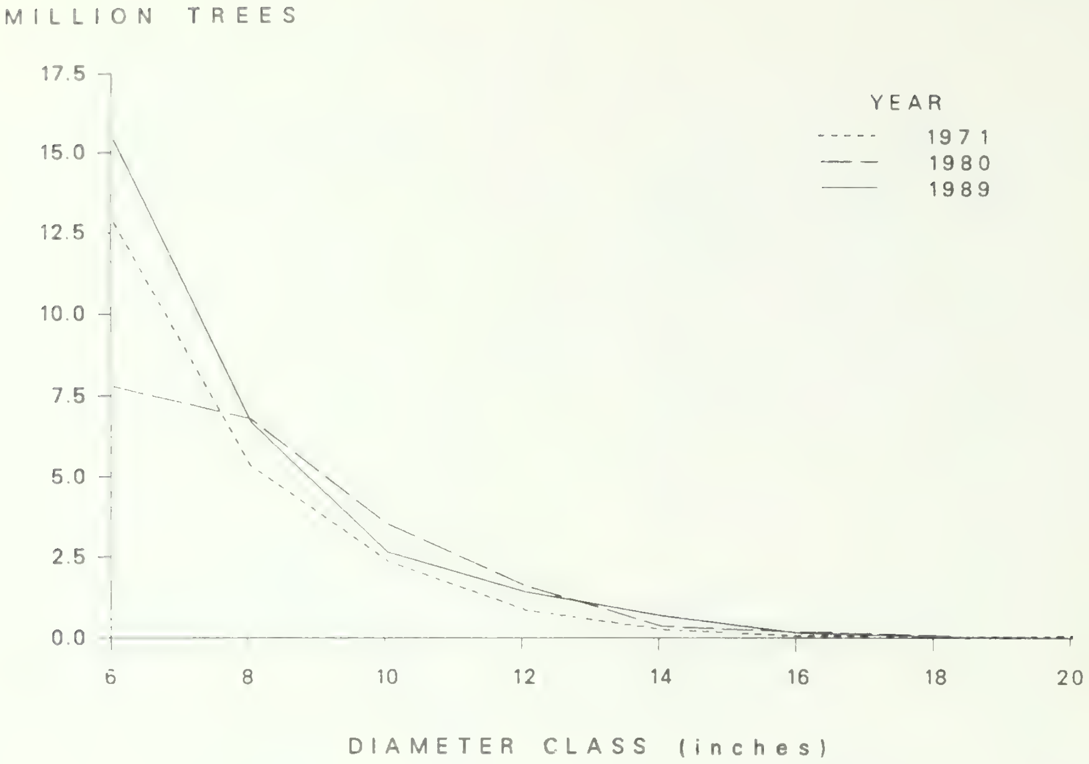

Figure 7.--Number of softwood growing-stock trees on timberland by diameter class, West-Central Tennessee, 1971, 1980, and 1989.

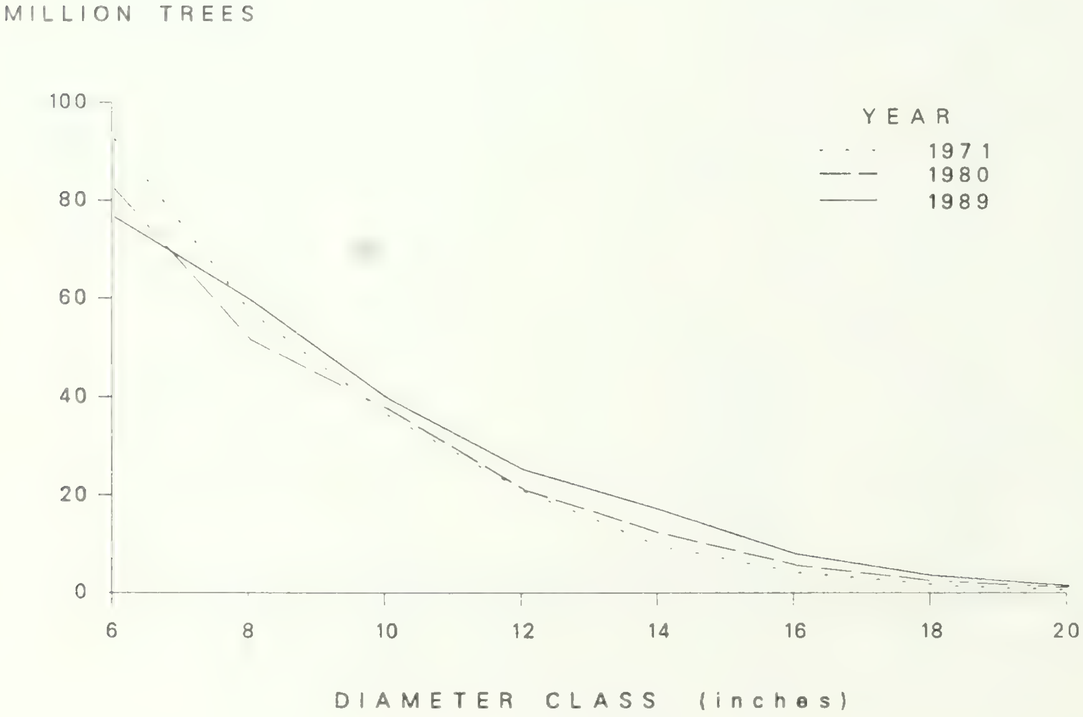

Figure 8.--Number of hardwood growing-stock trees on timberland by diameter class, West-Central Tennessee, 1971, 1980, and 1989.

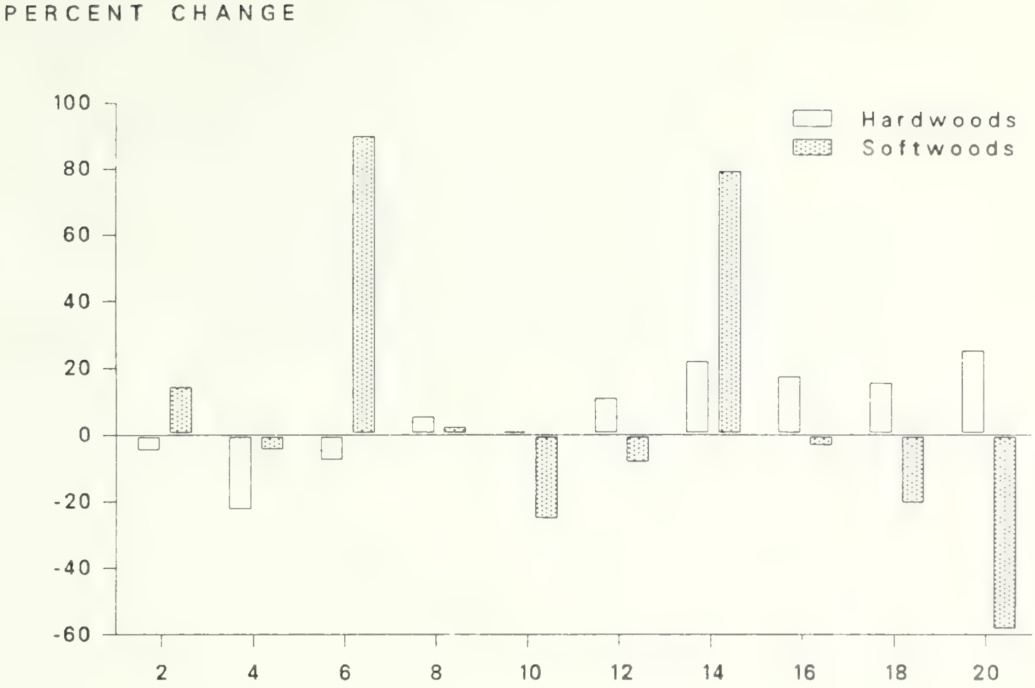

Figure 9.--Percent change in the number of live trees on timberland by species group and diameter class, West-Central Tennessee, 1980 and 1989.

ACKNOWLEDGMENTS

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Tabulates forest resource information from a new inventory of the West-Central Unit of Tennessee.

Additional Keywords: Area, volume, forest type, stand size, ownership.

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Forest Statistics for Tennessee's Plateau Counties — 1989

Dennis M. May and John S. Vissage

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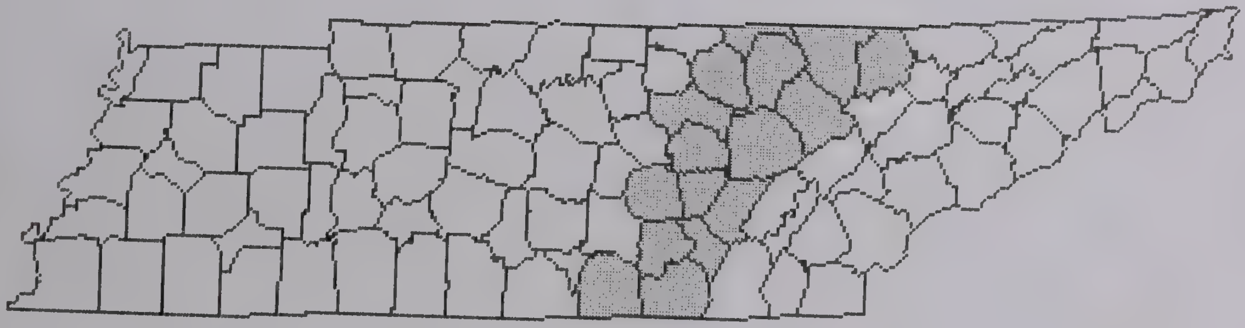

SUMMARY

The 1989 survey of the Plateau Unit of Tennessee revealed the following:

- Timberland now covers 3,064.8 thousand acres, an increase of 3 percent since 1980.
- Three-quarters of the unit's timberland is occupied by oak-hickory forest types.
- Pine plantations cover 137.7 thousand acres, almost 5 percent of the unit's timberland.
- Eighty-nine percent of the unit's timberland is privately owned.
- Forest industry ownership of timberland fell 20 percent, as did farmer ownership.
- Area in sawtimber-sized stands increased and now comprises 51 percent of all timberland.
- The number of hardwood growing-stock trees fell 32 percent, while softwood numbers increased 12 percent.
- Hardwood growing-stock volume climbed 33 percent to 3,167.4 million cubic feet and softwood growing-stock volume climbed 36 percent of 831.4 million cubic feet.
- Net growth increased for both growing stock and sawtimber, despite a general doubling in mortality.
- Removals decreased for growing stock, but increased for sawtimber.
- Growth exceeds removals by roughly 3 to 1.
- Hardwood grade 1 volume decreased 28 percent since 1980.

FOREWORD

The Southern Forest Survey, an activity of the Southern Forest Experiment Station Forest Inventory and Analysis work unit, covers the States of Alabama, Arkansas, Louisiana, Mississippi, Oklahoma, Tennessee, and Texas, and the island of Puerto Rico.

This survey is part of the nationwide Forest Survey originally authorized by the McSweeney-McNary Act of 1928. More recent legislation pertinent to the survey mission includes the Forest and Rangeland Renewable Resources Planning Act of 1974 and the Forest and Rangeland Renewable Resources Research Act of 1978. The survey mission is to develop, analyze, and maintain renewable forest resource information. This information is essential for formulation of forest policies and programs.

July 1989

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*Core tables are presented in response to the Southern Industrial Forestry Research Council's recommendations. These tables are identical among Forest Inventory and Analysis units in the eastern United States.

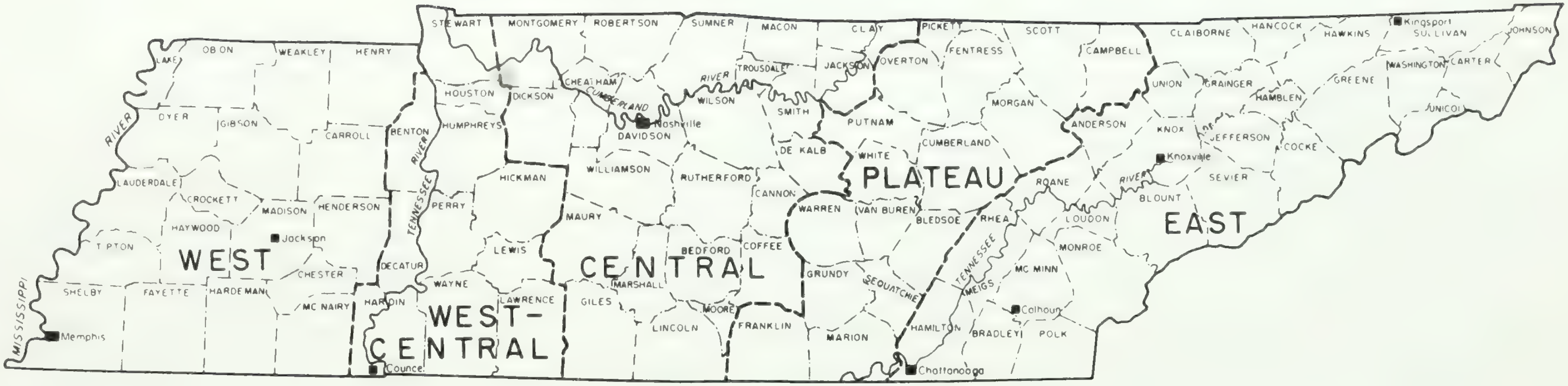

Figure I.-The forest survey regions of Tennessee.

Forest Statistics for Tennessee's Plateau Counties – 1989

Dennis M. May and John S. Vissage

INTRODUCTION

Tabulated results were derived from data obtained during a recent inventory of 16 counties comprising the Plateau Unit of Tennessee (fig. I). Tables 1-25 were developed to provide compatibility among Forest Inventory and Analysis Projects. Tables 26-40 are supplementary tables and may change from unit to unit or State to State to address specific resource issues.

Data on forest acreage and timber volume were secured by a three-step process. A forest-nonforest classification using aerial photographs was accomplished for points representing approximately 230 acres. These photo classifications were adjusted based on ground observations at sample locations representing approximately 3,840 acres. Finally, field measurements were made at forest locations on the intersections of grid lines spaced 3 miles apart. At these forest locations, per acre estimates were obtained from trees measured on ten 37.5 basal area factor prism points.

The sampling methods were designed to achieve suitable sampling errors for estimates of area and volume at the State level. Sampling error increases as the area or volume considered decreases. The sampling errors presented in table I, equal to one standard deviation for the sample data, may be used to construct confidence intervals for population estimates. For example, at the 95 percent confidence level, the confidence interval for growing-stock volume (in million cubic feet) in the Plateau Unit of Tennessee (with a sampling error or 3.4 percent) is

$$3{,}998.8 \pm 1.96(0.034 \times 3{,}998.8) = 3{,}998.8 \pm 266.5$$

where 1.96 is the number of standard deviations. This confidence interval indicates a 95-percent degree of confidence that the range, 3,732.3 to 4,265.3 million cubic feet, will contain the true growing-stock inventory volume.

Sampling errors for sub-groups of counties in the unit may be estimated by the following formula:

$$SE_g = \frac{SE_t\sqrt{X_t}}{\sqrt{X_g}}$$

where:

SE = standard error of estimate (expressed as a percent)
X = variable of interest (area or volume)
g = group of counties to be combined
t = total for the Unit.

Table I—*Sampling errors*[1] *for timberland, growing stock, and sawtimber, Plateau Counties, Tennessee, 1989*

County	Timberland	Growing stock			Sawtimber
		Volume	Growth	Removals	volume
	Percent				
Bledsoe	3.3	14.2	12.6	29.7	20.3
Campbell	2.2	9.2	11.7	36.1	10.4
Cumberland	1.3	9.6	9.5	20.4	12.3
Fentress	2.4	11.3	13.2	25.4	14.5
Franklin	1.8	12.3	20.7	25.0	17.3
Grundy	2.7	17.9	12.5	22.6	21.9
Marion	2.0	11.0	13.5	21.2	13.7
Morgan	1.8	13.3	8.5	23.3	15.4
Overton	2.6	9.0	12.0	47.2	10.7
Pickett	4.5	28.8	31.2	(2)	38.2
Putnam	3.0	19.9	12.6	27.6	25.8
Scott	2.3	7.0	12.6	21.2	9.1
Sequatchie	2.6	21.3	19.9	37.4	31.5
Van Buren	3.8	18.7	13.1	31.4	23.8
Warren	2.7	16.6	14.5	24.5	18.9
White	2.6	17.5	10.4	26.4	22.5
All counties	0.6	3.4	3.6	7.1	4.3

[1] By random-sampling formula.

[2] Sampling error greater than 50.

For example, the sampling error estimate of growing-stock volume for Overton, Putnam, and White counties is 8.2 percent. Thus, the 95 percent confidence interval for growing-stock volume is 692.3 ± 111.3 million cubic feet.

Ownership information is obtained through the 3-mile grid sample outlined above. County courthouse records are used to obtain ownership information for each forested plot. An expansion factor representing timberland area in that county is then applied to the ownership group the plot represents. Next, the ownership groups are totaled for each county. Thus, acreages reported at the county level are estimates and may not exactly match known totals for each ownership category within that county.

In order to achieve greater compatibility among Forest Inventory and Analysis Projects, a new tree classification system has been in effect since the 1988 Arkansas survey. Tree grade 5 is used to designate trees currently or prospectively capable of producing at least one 12-foot log or two 8-foot logs in the saw-log portion but not able to produce a 12-foot log in the butt 16 feet. These trees, formerly classed as rough or rotten, are now included in growing stock. Table II shows the impact of this change on volume and growth.

HIGHLIGHTS

Area

The Plateau Unit of Tennessee encompasses the counties from the Cumberland Plateau westward to the Highland Rim forming the eastern border of the Central Basin. The soils of the unit have been characterized as poor and unsuitable for agriculture. As a consequence, the unit has been the State's most densely forested unit. This distinction has been enhanced by a reversal of a long-time trend of declining timberland. Climbing 3 percent since 1980, timberland now covers 3,064.8 thousand acres, a full 70 percent of the unit's land area.

With three-quarters of the unit's timberland occupied by oak-hickory forest types alone, the unit remains predominantly hardwood. However, since 1980 the areas in hardwood types and mixed (oak-pine) types have remained relatively stable, while softwood types jumped by a third, adding 91 thousand acres. More than half of this increase occurred as pine plantations. Since 1980, approximately 50 thousand acres have been planted, bringing the total area occupied by plantations to 137.7 thousand acres.

Most of the timberland in the unit is privately held with only 11 percent in public ownership. Since 1980, significant shifts in ownership patterns have taken place. The Plateau Unit has held one the highest concentrations of forest industry land in the State. Although still true, close to 100 thousand acres of timberland have fallen from forest industry control since 1980. This amount is one-fifth of its previous holdings. Interestingly, much of this loss was concentrated in hardwood and mixed types, while industry ownership of pine types increased by 50 percent since 1980. Farmers also lost more than 100 thousand acres of timberland since 1980. The large losses by forest industry and farmers inevitably resulted in gains for other ownership groups. In the private sector, the corporate and individual ownership groups both gained over 100 thousand acres of timberland each and, in the public sector, miscellaneous federal ownership increased 52 percent.

In addition to increasing in area, the unit's timberlands have been maturing. Since 1980, the area of sawtimber-sized stands increased by over 300 thousand acres, while the areas in pole- and sapling-sized stands decreased. Today, sawtimber-sized stands occupy 51 percent of all timberland, whereas in 1980 they only accounted for 42 percent.

Table II–*Changes in volume and growth estimates due to inclusion of tree grade 5 in growing-stock inventory, Plateau Counties, Tennessee, 1989*

	Tree grade 5		
	Excluded from growing stock	Included in growing stock	Percent change
	Million cubic feet		
Softwood:			
Growing-stock volume	812.6	831.4	2.3
Rough and rotten volume	28.7	9.9	-65.5
Growing-stock growth	29.4	31.4	6.8
Hardwood:			
Growing-stock volume	2962.9	3167.4	6.9
Rough and rotten volume	531.5	327.1	-38.5
Growing-stock growth	99.1	121.3	22.4
	Million board feet		
Softwood:			
Sawtimber volume	2665.1	2724.8	2.2
Sawtimber growth	96.7	103.2	6.7
Hardwood:			
Sawtimber volume	9406.4	10157.7	8.0
Sawtimber growth	405.7	487.2	20.1

Timber Inventory

With the maturation of the unit's timberland, a shift towards fewer and larger trees of greater volume would be expected. Such is the case with the hardwood growing-stock portion of the inventory, which experienced a 32-percent reduction in numbers and a 33-percent increase in volume to 3,167.4 million cubic feet. The reduction in numbers was concentrated in size classes smaller than 8 inches and generally occurred across all species, except for yellow-poplar which increased across all size classes. The volume increment occurred across all species and size classes.

Individual softwood species, such as shortleaf and Virginia pine, experienced similar trends of decreasing numbers and increasing volumes. However, on the whole, softwood numbers increased, climbing 12 percent due to an influx of smaller white pines, hemlocks, cedars, and planted loblolly pines. At the same time, softwood volume also increased, rising 36 percent to 831.4 million cubic feet. The volume increment generally occurred across all species and size classes.

The maturing nature of the unit's timberland is especially evident in the sawtimber portion of the inventory, which experienced increases in both numbers and volumes of trees since 1980. The number of sawtimber trees climbed 31 percent for both softwood and hardwood and volume increased 36 percent to 2,724.8 million board feet for softwood and 41 percent to 10,157.7 million board feet for hardwood.

In a unit where 79 percent of the sawtimber volume is hardwood, the quality associated with the sawtimber volume is of special concern. In spite of the large increase in hardwood sawtimber inventory, grade 1 volume fell 28 percent since 1980. Although this decline generally occurred across all species, much of the loss, 81 percent, was associated with the oaks and hickories. These two species also account for the majority of hardwood removals, indicating a tendency towards high-grading during harvest. Yellow-poplar was the major exception to this general decline in grade 1 hardwood volume with a 19-percent gain over the period. Countering the reduction in hardwood quality was a gain in softwood volume across all grades, including an 18-percent increase in grade 1 softwood volume since 1980.

Growth, Removals, and Mortality

The increasing inventory of the unit is a consequence of a favorable growth-to-drain situation since 1980. On an annual basis, net growth for the unit averaged 152.7 million cubic feet for growing stock and 590.4 million board feet for sawtimber. These growth figures reflect the physical change in the inventory over the survey period as well as a growing-stock definition change initiated since the 1980 survey. As a result, these growth estimates are not directly comparable to past growth estimates. Using comparable growth estimates that exclude the definition change (table II), net growth increased 23 percent for growing stock and 40 percent for sawtimber. The large increase in sawtimber growth is a reflection of the unit's maturing forest. These increases were in spite of a general doubling in mortality since 1980, which reduced net growth by 20 percent for growing-stock and 15 percent for sawtimber. In softwoods, the mortality was almost exclusively concentrated in yellow pines. Oaks and hickories comprised two-thirds of the hardwood mortality. Disease was by far the leading cause of mortality in both species groups.

Removals, the last element of drain on the inventory, were concentrated in sawtimber-sized trees as evidenced by the 3-percent reduction in growing-stock removals and 24-percent rise in sawtimber removals. On an average annual basis, growing-stock removals only reached 48.6 million cubic feet, while sawtimber removals climbed to 193.2 million board feet. All of the rise in sawtimber removals was due to increased hardwood removals over the period; softwood removals actually declined 13 percent. Softwood removals were almost exclusively in yellow pine. Hardwood removals were concentrated in the oaks and hickories, although removals of soft hardwood species also jumped appreciably over the period. These generally reduced removals resulted in growth exceeding removals by roughly 3 to 1 for both growing-stock and sawtimber portions of the inventory.

The unit's timberlands are generally in a desirable condition. The increasing timberland base is supporting a maturing forest that's increasing in volume and growing at three times the rate of depletion. Only a drop in hardwood quality impairs the current status of the unit's timberlands.

DEFINITION OF TERMS

Average net annual growth. — Average net annual volume increase for the inter-survey period.

Average annual mortality. — Average annual sound-wood volume of growing-stock trees dying from natural causes.

Average annual removals. — Average net annual volume of growing-stock trees removed from the inventory by harvesting, cultural operations (such as timber-stand improvement), land clearing, or changes in land use.

Commercial species. — Tree species which normally develop into trees suitable for industrial wood products.

Forest land. — Land at least 16.7 percent stocked by forest trees of any size, or formerly having such tree cover, and not currently developed for nonforest use.

Forest type. — A classification of forest land based upon the species forming a plurality of live-tree stocking.

Growing-stock trees. — Live trees of commercial species. Rough and rotten trees are excluded.

Growing-stock volume. — The cubic-foot volume of sound wood in growing-stock trees at least 5.0 inches in diameter at breast height, from a l-foot stump to a minimum 4.0-inch top diameter outside bark of the central stem, or to the point where the central stem breaks into limbs.

Live trees. — Commercial and noncommercial tree species of sapling size or larger.

Natural stands. — Stands with no evidence of artificial regeneration. This includes those established by seed tree regeneration methods.

Noncommercial species. — Tree species of typically small size, poor form, or inferior quality which normally do not develop into trees suitable for industrial wood products.

Planted stands. — Stands with some evidence of planting or direct seeding.

Poletimber trees. — Growing-stock trees at least 5.0 inches in diameter at breast height, but smaller than sawtimber size.

Reserved timberland. — Productive public forest land withdrawn from timber utilization through statute or administrative regulations.

Rotten trees. — Live trees of commercial species that do not contain at least one 12-foot log or two 8-foot logs in the saw-log portion, now or prospectively, primarily because of rot.

Rough trees. — Live trees of commercial species that do not contain at least one 12-foot log or two 8-foot logs in the saw-log portion, now or prospectively, primarily because of roughness or poor form. Also included are all live trees of noncommercial species.

Saplings. — Growing-stock trees at least 1.0 inches but less than 5.0 inches in diameter at breast height.

Sawtimber trees. — Live trees that contain at least one 12-foot log or two 8-foot logs in the saw-log portion, and meet regional specifications for freedom from defect. Softwoods must be at least 9.0 inches in diameter at breast height and hardwoods at least 11.0 inches in diameter at breast height.

Sawtimber volume. — Sound-wood volume of the saw-log portion of growing-stock sawtimber trees in board feet, International 1/4-inch rule and in cubic feet.

Seedlings. — Growing-stock trees less than 1.0 inches in diameter at breast height and greater than one foot tall for hardwoods, greater than six inches tall for softwoods, and greater than one-half inch in diameter at ground level for longleaf pine.

Select red oaks. — A classification of several red oak species composed of: cherrybark, Shumard, and northern red oaks.

Select white oaks. — A classification of several white oak species composed of: white, swamp chestnut, swamp white, chinkapin, Durand, and bur oaks.

Site class. — A classification of forest land in terms of inherent capacity to grow crops of industrial wood.

Stand-size class. — A classification of forest land based on the diameter class of live trees on the sampled area; that is, sawtimber, poletimber, or sapling and seedling.

Timberland. — Forest land that is producing, or is capable of producing, crops of industrial wood and not withdrawn from timber utilization. Timberland is synonymous with "commercial forest land" in prior reports.

Tree grade. — A classification of the volume of the saw-log portion of sawtimber trees, based on: 1) the log grade of the butt log, or 2) ability to produce at least one 12-foot or two 8-foot logs in the upper-section of the saw-log portion.

Woodland. — Forest land incapable of yielding crops of industrial wood because of adverse site conditions.

CORE TABLES 1-25

Table 1–*Area by county and land class, Plateau Counties, Tennessee, 1989*

County	All land[1]	Forest land				Nonforest land
		Total	Timberland[2]	Woodland[3]	Reserved timberland	
	Thousand acres					
Bledsoe	260.7	186.3	186.3	...	...	74.4
Campbell	306.6	250.3	250.2	...	0.1	56.2
Cumberland	436.7	320.3	320.3	...	...	116.3
Fentress	318.7	244.1	244.1	...	0.1	74.6
Franklin	347.5	183.4	183.0	...	0.4	164.1
Grundy	231.2	174.5	165.9	...	8.6	56.7
Marion	328.0	251.7	251.7	...	...	76.2
Morgan	334.5	287.8	276.2	...	11.6	46.7
Overton	277.2	170.4	170.4	...	...	106.8
Pickett	102.0	68.4	68.4	...	...	33.6
Putnam	255.5	152.5	152.3	...	0.1	103.0
Scott	338.0	300.3	300.3	...	...	37.7
Sequatchie	169.9	137.3	137.3	...	...	32.6
Van Buren	174.4	145.0	135.4	...	9.6	29.4
Warren	275.6	93.6	93.6	...	...	182.0
White	238.7	129.4	129.4	...	...	109.3
All counties	4394.9	3095.3	3064.8	...	30.5	1299.6

[1] From U.S. Bureau of the Census.

[2] Forest land (formerly termed commercial forest land) that is producing or capable of producing at least 20 cubic feet of industrial wood per acre per year. Includes areas which may be inaccessible or inoperable by current standards. Excludes reserved timberlands.

[3] Forest land incapable of producing 20 cubic feet of industrial wood per acre per year under natural conditions because of adverse site conditions.

Table 2–*Area of timberland by county and ownership class, Plateau Counties, Tennessee, 1989*

County	All ownerships	National forest	Misc. federal	State	County and municipal	Forest industry[1]	Farmer	Corporate[2]	Individual[2]
	Thousand acres								
Bledsoe	186.3	...	...	17.5	...	34.9	34.9	34.9	64.0
Campbell	250.2	...	11.6	29.1	5.8	5.8	40.7	110.6	46.6
Cumberland	320.3	...	...	52.4	5.8	46.6	29.1	46.6	139.8
Fentress	244.1	...	5.8	11.6	...	87.2	23.2	40.7	75.5
Franklin	183.0	...	17.2	5.7	...	...	11.4	28.6	120.1
Grundy	165.9	...	5.7	...	...	34.3	11.4	28.6	85.8
Marion	251.7	...	...	18.0	...	30.0	12.0	36.0	155.8
Morgan	276.2	...	5.6	28.2	...	5.6	16.9	50.7	169.1
Overton	170.4	...	6.8	13.6	...	...	61.3	13.6	75.0
Pickett	68.4	...	13.7	6.8	...	...	13.7	6.8	27.4
Putnam	152.3	...	5.4	...	...	...	27.2	38.1	81.6
Scott	300.3	...	49.1	5.5	...	10.9	60.1	92.8	81.9
Sequatchie	137.3	...	...	...	...	22.9	...	5.7	108.7
Van Buren	135.4	...	...	5.4	...	27.1	10.8	65.0	27.1
Warren	93.6	...	...	...	...	...	46.8	15.6	31.2
White	129.4	...	...	...	...	28.1	45.0	5.6	50.6
All counties	3064.8	...	121.0	193.8	11.6	333.4	444.7	620.0	1340.2

[1] Includes land leased to forest industry.

[2] Indian land will be classed as corporate or individual as defined by the Bureau of Indian Affairs.

Table 3–*Area of timberland by county and forest type group, Plateau Counties, Tennessee, 1989*

County	Total	Forest type group						
		White-red jack pine	Loblolly-shortleaf pine		Oak-pine	Oak-hickory	Oak-gum-cypress	Nontyped[1]
			Planted	Natural				
	Thousand acres							
Bledsoe	186.3	...	23.3	17.5	29.1	116.4	...	...
Campbell	250.2	...	5.8	17.5	29.1	197.9	...	...
Cumberland	320.3	5.8	23.3	23.3	58.2	209.7	...	...
Fentress	244.1	...	11.6	40.7	40.7	151.1	...	...
Franklin	183.0	...	...	...	11.4	171.6	...	...
Grundy	165.9	...	...	11.4	5.7	143.0	...	5.7
Marion	251.7	...	6.0	...	36.0	203.8	6.0	...
Morgan	276.2	...	5.6	...	84.5	186.0	...	...
Overton	170.4	...	...	6.8	13.6	149.9	...	...
Pickett	68.4	...	...	...	6.8	61.6	...	...
Putnam	152.3	...	...	10.9	16.3	125.1	...	...
Scott	300.3	5.5	...	16.4	38.2	240.2	...	...
Sequatchie	137.3	5.7	11.4	40.0	...	80.1	...	...
Van Buren	135.4	5.4	10.8	21.7	10.8	86.7	...	...
Warren	93.6	...	...	...	5.2	83.2	5.2	...
White	129.4	...	16.9	5.6	5.6	95.7	5.6	...
All counties	3064.8	22.4	114.8	211.7	391.5	2301.9	16.8	5.7

[1] Timberland with no current stocking.

Table 4–*Area of timberland by county and stand-size class, Plateau Counties, Tennessee, 1989*

County	All classes	Stand-size class			Nonstocked[1] areaa
		Sawtimber	Poletimber	Sapling-seedling	
	Thousand acres				
Bledsoe	186.3	46.6	93.1	46.6	...
Campbell	250.2	157.1	64.0	29.1	...
Cumberland	320.3	157.3	110.7	52.4	...
Fentress	244.1	104.6	116.2	23.2	...
Franklin	183.0	85.8	57.2	40.0	...
Grundy	165.9	57.2	57.2	45.8	5.7
Marion	251.7	161.8	47.9	42.0	...
Morgan	276.2	146.6	73.3	56.4	...
Overton	170.4	122.7	34.1	13.6	...
Pickett	68.4	41.1	20.5	6.8	...
Putnam	152.3	76.2	43.5	32.6	...
Scott	300.3	196.6	76.4	27.3	...
Sequatchie	137.3	57.2	51.5	28.6	...
Van Buren	135.4	43.3	43.3	48.8	...
Warren	93.6	46.8	36.4	10.4	...
White	129.4	67.5	50.6	11.3	...
All counties	3064.8	1568.2	976.1	514.9	5.7

[1] Timberland less than 16.7 percent stocked

Table 5—*Area of timberland by county and site class, Plateau Counties, Tennessee, 1989*

County	All classes	Site class (cubic feet/acre/year) > 165	120-165	85-120	50-85	< 50
	Thousand acres					
Bledsoe	186.3	23.3	5.8	46.6	75.7	34.9
Campbell	250.2	11.6	40.7	98.9	75.7	23.3
Cumberland	320.3	23.3	29.1	93.2	128.1	46.6
Fentress	244.1	5.8	29.1	93.0	98.8	17.4
Franklin	183.0	...	...	28.6	85.8	68.6
Grundy	165.9	5.7	11.4	51.5	45.8	51.5
Marion	251.7	18.0	30.0	36.0	119.9	47.9
Morgan	276.2	...	11.3	78.9	157.8	28.2
Overton	170.4	6.8	13.6	68.1	61.3	20.4
Pickett	68.4	6.8	13.7	13.7	20.5	13.7
Putnam	152.3	10.9	27.2	38.1	70.7	5.4
Scott	300.3	...	49.1	65.5	152.9	32.8
Sequatchie	137.3	22.9	22.9	28.6	57.2	5.7
Van Buren	135.4	16.3	10.8	48.8	32.5	27.1
Warren	93.6	5.2	5.2	20.8	46.8	15.6
White	129.4	...	...	28.1	90.0	11.3
All counties	3064.8	156.6	300.0	838.3	1319.5	450.5

Table 6—*Area of timberland by county and stocking classes of growing-stock trees, Plateau Counties, Tennessee, 1989*

County	All classes	Stocking class (percent) > 130	100-130	60-100	16.7-60	< 16.7
	Thousand acres					
Bledsoe	186.3	...	52.4	116.4	17.5	...
Campbell	250.2	...	29.1	174.6	46.6	...
Cumberland	320.3	...	87.4	209.7	23.3	...
Fentress	244.1	5.8	52.3	168.5	17.4	...
Franklin	183.0	...	...	125.8	57.2	...
Grundy	165.9	...	22.9	91.5	45.8	5.7
Marion	251.7	...	...	179.8	65.9	6.0
Morgan	276.2	...	45.1	197.3	28.2	5.6
Overton	170.4	...	13.6	143.1	13.6	...
Pickett	68.4	...	6.8	61.6	...	...
Putnam	152.3	...	27.2	81.6	43.5	...
Scott	300.3	5.5	81.9	185.6	27.3	...
Sequatchie	137.3	11.4	17.2	108.7	...	...
Van Buren	135.4	...	37.9	92.1	5.4	...
Warren	93.6	...	5.2	52.0	36.4	...
White	129.4	5.6	28.1	84.4	11.3	...
All counties	3064.8	28.3	507.1	2072.7	439.3	17.3

Table 7–*Area of timberland by forest type and ownership class, Plateau Counties, Tennessee, 1989*

Forest type[1]	All ownerships	National forest	Other public	Forest industry	Forest industry-leased	Other private
	- - - - - - - - - -	- - - - - - - - - -	*Thousand acres*	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
White-red-jack pine	22.4	...	11.2	...	...	11.2
Loblolly-shortleaf pine	326.5	...	17.5	154.1	...	155.0
Softwood total	349.0	...	28.7	154.1	...	166.2
Oak-pine	391.5	...	63.8	34.9	...	292.8
Oak-hickory	2301.9	...	234.0	132.8	6.0	1929.1
Oak-gum-cypress	16.8	...	...	...	...	16.8
Hardwood total	2710.1	...	297.8	167.7	6.0	2238.7
Nontyped[2]	5.7	...	...	5.7	...	...
All types	3064.8	...	326.5	327.5	6.0	2404.9

[1] Forest type is based on species plurality of all live trees. Mixed types that in combination contain a majority of hardwood stocking are hardwood types.

[2] Timberland with no current stocking.

Table 8–*Area of timberland by ownership and stocking classes of growing-stock trees, Plateau Counties, Tennessee, 1989*

Ownership class	All classes	Stocking class (percent)				
		> 130	100-130	60-100	16.7-60	< 16.7
	- - - - - - - - - -	- - - - - - - - - -	*Thousand acres*	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
Other public	326.5	...	70.1	222.2	34.2	...
Forest industry	327.5	17.2	125.1	173.5	6.0	5.7
Forest industry-leased	6.0	...	...	6.0	...	...
Other private	2404.9	11.2	311.9	1671.0	399.2	11.6
All ownerships	3064.8	28.3	507.1	2072.7	439.3	17.3

Table 9–*Area of timberland by forest type and stand-size class, Plateau Counties, Tennessee, 1989*

		Stand-size class			
Forest type[1]	All classes	Sawtimber	Poletimber	Sapling-seedling	Nonstocked[2] areas
	Thousand acres				
White-red-jack pine	22.4	22.4	...	...	...
Loblolly-shortleaf pine	326.5	104.5	136.7	85.3	...
Softwood total	349.0	126.9	136.7	85.3	...
Oak-pine	391.5	178.3	136.6	76.6	...
Oak-hickory	2301.9	1251.8	697.3	353.0	...
Oak-gum-cypress	16.8	11.2	5.6	...	...
Hardwood total	2710.1	1441.3	839.3	429.5	...
Nontyped[3]	5.7	...	...	...	5.7
All types	3064.8	1568.2	976.1	514.9	5.7

[1] Forest type is based on species plurality of all live trees. Mixed types that in combination contain a majority of hardwood stocking are hardwood types.

[2] Timberland less than 16.7 percent stocked.

[3] Timberland with no current stocking.

Table 10–*Number of live trees on timberland by species and diameter class, Plateau Counties, Tennessee, 1989*

		Diameter class (inches at breast height)											
Species	All classes	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Shortleaf-loblolly pine	73188	9875	19963	20284	12690	5718	3097	1089	267	112	55	39	...
Other yellow pines	101102	38946	20444	16023	11894	6341	4333	2174	633	223	69	24	...
Eastern white-red pine	24103	15979	4186	827	1015	607	510	368	216	115	127	134	19
Eastern hemlock	22624	13838	4346	1904	555	528	401	406	231	234	67	115	...
Other softwoods	20421	10396	5051	3026	741	835	254	105	13	...	...	...	...
Total softwoods	241438	89033	53989	42064	26894	14029	8595	4140	1360	684	318	312	19
Select white oaks	197761	84661	56666	23342	11501	8530	5115	3533	2029	1259	617	494	14
Select red oaks	14542	4233	2052	1724	1721	1268	916	836	697	402	366	299	27
Other white oaks	74726	22756	14852	10359	9044	6185	4722	3050	1766	877	507	497	110
Other red oaks	100946	32810	22469	15446	10063	6103	5209	3644	2490	1400	732	574	7
Hickory	130926	70105	27762	9104	8686	6583	4189	2222	1159	601	281	212	21
Yellow birch	2717	1632	627	406	...	35	...	16	...	...	...	...	...
Hard maple	81126	46678	20194	5075	3750	2267	1390	652	461	241	199	176	42
Soft maple	316128	235939	47286	14899	8415	3726	2647	1366	866	509	275	202	...
Beech	17672	11437	1546	1289	967	678	401	254	188	307	122	410	72
Sweetgum	13178	5917	3091	1786	1156	543	333	160	122	12	31	25	3
Tupelo-blackgum	108878	80225	19645	3794	1925	1176	634	621	459	193	124	73	9
Ash	34203	18181	7197	4324	1624	1219	661	461	273	113	49	101	...
Basswood	9406	7494	...	222	579	360	281	80	189	126	52	22	...
Yellow-poplar	75363	35329	10969	7525	5956	4941	3646	2969	1685	1190	609	496	47
Black walnut	774	...	...	...	239	127	193	161	14	28	...	8	4
Other hardwoods	389158	299138	66119	12156	5484	2797	1500	914	487	266	194	103	...
Total hardwoods	1567503	956533	300474	111452	71110	46538	31838	20939	12885	7524	4159	3692	358
Noncommercial	244985	167857	56097	16015	3321	1088	404	147	30	13	12	...	...
All species	2053926	1213424	410561	169531	101325	61654	40837	25226	14275	8221	4490	4004	377

Table 11—*Number of growing-stock trees on timberland by species and diameter class, Plateau Counties, Tennessee, 1989*

Species	All classes	Diameter class (inches at breast height) 1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Shortleaf-loblolly pine	71334	8807	19429	20284	12485	5671	3097	1089	267	112	55	39	...
Other yellow pines	93758	35267	17244	16023	11688	6217	4304	2132	616	175	69	24	...
Eastern white-red pine	22041	14461	3669	827	1015	607	483	368	216	115	127	134	19
Eastern hemlock	21886	13313	4346	1784	555	482	375	406	214	234	67	110	...
Other softwoods	15315	7138	3993	2497	741	621	226	86	13	...	...	...	...
Total softwoods	224335	78986	48681	41415	26483	13598	8485	4080	1326	635	318	307	19
Select white oaks	152612	55043	45775	20626	11169	8158	4664	3315	1901	1075	508	375	5
Select red oaks	13366	3708	2052	1516	1589	1114	883	793	680	402	347	257	25
Other white oaks	57408	11125	13260	9488	8483	5601	4075	2473	1480	697	365	331	30
Other red oaks	82198	22328	17739	14560	9382	5745	4654	3272	2227	1209	624	457	...
Hickory	89882	36749	22453	8086	8093	6432	3902	2060	1095	525	271	195	21
Yellow birch	2061	1099	627	319	...	...	...	16	...	...	...	...	...
Hard maple	56100	27049	16991	3914	3261	2132	1259	542	429	229	199	92	4
Soft maple	181089	117035	37796	12141	7061	2820	2010	1084	516	340	174	113	...
Beech	10596	5658	1546	788	804	540	248	216	156	243	94	266	35
Sweetgum	7879	2033	2075	1606	1096	432	307	160	109	12	31	17	3
Tupelo-blackgum	48898	28769	12700	3277	1726	878	525	458	350	143	31	37	4
Ash	17546	6503	3580	3647	1395	1146	472	366	258	87	38	54	...
Basswood	2639	1066	...	84	579	292	281	80	173	37	32	15	...
Yellow-poplar	63443	24364	10969	7001	5883	4777	3564	2949	1665	1166	599	481	25
Black walnut	733	...	...	...	239	127	169	143	14	28	...	8	4
Other hardwoods	176541	127833	31945	7656	4186	2214	1145	798	373	189	122	78	...
Total hardwoods	962990	470362	219508	94709	64946	42407	28158	18725	11426	6381	3435	2776	157
All species	1187325	549349	268189	136124	91429	56005	36643	22805	12752	7016	3753	3083	176

Table 12—*Volume of growing stock on timberland by species and diameter class, Plateau Counties, Tennessee, 1989*

Species	All classes	Diameter class (inches at breast height) 5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet										
Shortleaf-loblolly pine	286.9	40.9	71.7	67.0	56.8	30.1	9.8	5.4	3.0	2.3	...
Other yellow pines	393.0	53.2	85.0	79.5	81.6	57.5	22.8	7.6	4.4	1.4	...
Eastern white-red pine	72.0	2.0	6.3	7.4	9.0	9.3	7.2	5.7	7.8	13.6	3.7
Eastern hemlock	58.7	3.9	2.8	5.0	7.1	10.0	7.5	9.7	4.0	8.6	...
Other softwoods	20.8	6.1	4.1	5.7	3.2	1.5	0.2	...	...	...	...
Total softwoods	831.4	106.1	170.0	164.7	157.7	108.3	47.5	28.4	19.1	25.9	3.7
Select white oaks	545.4	56.9	70.0	93.3	85.3	81.2	64.5	45.1	25.7	22.6	0.6
Select red oaks	148.7	5.0	10.1	12.6	15.4	20.8	23.2	17.7	19.7	20.6	3.6
Other white oaks	361.7	25.3	46.0	57.2	66.3	54.5	45.6	27.5	17.1	20.0	2.1
Other red oaks	478.5	36.7	53.6	58.2	73.9	75.1	69.2	49.7	31.9	30.0	...
Hickory	376.9	21.9	46.5	73.4	76.3	54.5	41.5	26.4	16.4	17.0	3.1
Yellow birch	1.0	0.6	...	...	...	0.4	...	...	...	...	...
Hard maple	148.2	11.1	22.7	26.9	23.5	15.6	16.1	12.1	11.8	7.9	0.6
Soft maple	210.6	34.6	42.2	32.3	32.8	23.9	15.6	12.8	9.4	6.9	...
Beech	70.3	2.5	5.6	6.2	3.6	5.6	4.9	10.0	4.4	23.2	4.2
Sweetgum	31.2	2.9	5.4	5.2	5.8	3.4	4.2	0.6	1.7	1.2	0.6
Tupelo-blackgum	56.7	6.6	8.8	7.7	7.0	9.0	8.8	4.6	1.6	2.2	0.3
Ash	69.2	9.0	8.3	13.2	9.1	9.3	9.0	4.6	2.2	4.6	...
Basswood	30.6	0.4	4.9	4.4	6.7	2.5	6.6	2.1	1.6	1.4	...
Yellow-poplar	488.6	21.8	40.5	57.8	71.7	87.2	67.0	59.8	36.3	42.9	3.6
Black walnut	11.9	...	1.4	1.3	2.7	3.9	0.5	1.1	...	0.5	0.5
Other hardwoods	137.9	17.8	24.0	23.6	18.8	21.2	12.4	7.5	7.7	4.9	...
Total hardwoods	3167.4	253.2	390.1	473.4	499.0	468.3	389.0	281.5	187.6	206.0	19.3
All species	3998.8	359.3	560.1	638.1	656.7	576.6	436.5	309.9	206.7	231.9	23.0

Table 13—*Volume of growing stock in the saw-log portion of sawtimber[1] trees on timberland by species and diameter class, Plateau Counties, Tennessee, 1989*

		Diameter class (inches at breast height)							
Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet								
Shortleaf-loblolly pine	148.5	53.3	50.0	27.0	8.8	4.7	2.7	2.1	...
Other yellow pines	214.3	63.4	68.8	50.5	20.0	6.6	3.8	1.2	...
Eastern white-red pine	55.5	5.9	7.9	8.2	6.6	4.9	6.6	11.7	3.7
Eastern hemlock	46.2	4.0	6.1	8.7	6.7	9.1	3.7	7.9	...
Other softwoods	8.9	4.6	2.8	1.3	0.2	...	...	...	...
Total softwoods	473.4	131.1	135.6	95.7	42.2	25.3	16.8	22.9	3.7
Select white oaks	264.8	...	64.3	66.8	53.9	38.5	22.0	18.7	0.5
Select red oaks	101.1	...	11.7	17.0	19.3	15.1	17.0	17.7	3.4
Other white oaks	188.8	...	50.6	44.3	38.2	23.4	13.8	16.7	1.7
Other red oaks	274.1	...	56.7	62.5	59.2	42.7	27.3	25.8	...
Hickory	193.5	...	58.2	45.9	35.5	22.7	13.9	14.3	3.0
Yellow Birch	0.2	...	...	0.2	...	...	...	...	...
Hard maple	69.9	...	17.0	12.7	13.1	10.0	10.0	6.7	0.5
Soft maple	79.1	...	23.3	18.3	13.0	10.8	8.2	5.5	...
Beech	45.3	...	2.5	4.4	3.8	8.5	3.8	18.9	3.3
Sweetgum	13.5	...	3.8	2.6	3.6	0.6	1.5	1.1	0.4
Tupelo-blackgum	28.6	...	5.5	7.6	7.8	4.1	1.5	2.0	0.3
Ash	30.9	...	6.6	7.2	7.2	4.1	1.8	3.9	...
Basswood	17.3	...	5.3	2.0	5.5	1.7	1.5	1.3	...
Yellow-poplar	312.3	...	52.0	72.4	59.4	53.7	32.6	38.9	3.3
Black walnut	6.7	...	1.7	3.2	0.3	0.8	...	0.3	0.5
Other hardwoods	57.3	...	13.4	16.9	9.8	6.3	6.6	4.3	...
Total hardwoods	1683.4	...	372.6	384.0	329.5	242.9	161.5	176.0	16.9
All species	2156.8	131.1	508.2	479.7	371.7	268.2	178.3	198.9	20.6

[1] That part of the bole of sawtimber trees between a 1-foot stump and saw-log top.

Table 14–*Volume of sawtimber on timberland by species and diameter class, Plateau Counties , Tennessee, 1989*

Species	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Shortleaf-loblolly pine	856.8	287.4	288.8	166.1	54.9	31.2	16.5	11.8	...
Other yellow pines	1233.0	340.7	390.9	304.8	125.3	39.6	24.5	7.2	...
Eastern white-red pine	334.0	31.1	44.1	46.0	37.5	32.0	40.5	76.8	25.9
Eastern hemlock	257.9	19.9	33.5	48.9	39.7	49.6	21.8	44.6	...
Other softwoods	43.1	22.5	13.6	6.5	0.5	...	...	...	...
Total softwoods	2724.8	701.6	770.8	572.3	257.9	152.5	103.3	140.5	25.9
Select white oaks	1581.6	...	355.8	386.9	331.2	243.8	142.1	118.6	3.3
Select red oaks	626.2	...	66.5	101.2	117.0	95.3	108.6	114.4	23.3
Other white oaks	1119.1	...	284.7	258.4	229.7	144.6	87.9	103.3	10.4
Other red oaks	1632.8	...	310.6	360.5	356.4	265.6	172.8	166.9	...
Hickory	1193.9	...	336.9	278.4	223.9	146.9	91.2	95.6	21.1
Yellow birch	1.1	...	...	1.1	...	...	...	...	...
Hard maple	440.5	...	99.2	80.8	81.7	64.9	64.2	46.7	3.1
Soft maple	459.9	...	126.5	105.7	79.6	64.4	50.4	33.3	...
Beech	284.9	...	13.4	26.4	23.3	52.7	24.4	123.3	21.2
Sweetgum	77.1	...	21.0	13.7	21.3	3.4	8.8	6.0	2.7
Tupelo-blackgum	163.7	...	28.1	42.4	46.0	23.7	8.8	13.3	1.4
Ash	193.7	...	41.4	42.4	45.9	26.5	11.9	25.5	...
Basswood	106.4	...	32.9	12.3	33.4	11.3	8.4	8.0	...
Yellow-poplar	1892.3	...	301.9	434.3	362.7	333.6	197.8	242.6	19.4
Black walnut	41.5	...	9.2	20.5	1.6	4.9	...	2.0	3.3
Other hardwoods	343.1	...	75.0	102.7	58.7	39.6	41.9	25.3	...
Total hardwoods	10157.7	...	2103.1	2267.7	2012.5	1521.3	1019.2	1124.8	109.3
All species	12882.5	701.6	2873.9	2840.0	2270.3	1673.7	1122.5	1265.3	135.2

Table 15–*Volume of growing stock and sawtimber on timberland by county and species group, Plateau Counties, Tennessee, 1989*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Bledsoe	187.5	26.6	40.8	2.6	22.7	94.8	457.6	43.2	126.5	10.7	51.6	225.6
Campbell	354.0	...	50.6	5.7	97.1	200.6	1335.9	...	172.5	19.7	344.0	799.5
Cumberland	418.3	9.5	109.5	4.1	64.2	231.0	1276.9	2.0	422.3	13.4	160.9	678.2
Fentress	363.5	10.5	102.6	15.3	65.2	170.0	1057.7	13.8	327.9	61.5	177.3	477.2
Franklin	175.7	...	...	4.4	16.5	154.8	574.5	...	...	6.3	64.9	503.2
Grundy	194.4	...	29.6	2.2	40.0	122.5	519.2	...	64.9	6.1	117.4	330.8
Marion	265.4	0.9	33.1	7.1	50.1	174.2	846.9	...	117.3	34.1	150.6	544.9
Morgan	368.7	1.2	86.3	2.0	94.9	184.4	1323.0	...	342.1	8.4	318.9	653.6
Overton	291.3	...	28.6	2.9	123.8	136.0	1072.8	...	140.7	4.6	451.7	475.8
Pickett	92.9	...	1.7	5.3	31.3	54.6	295.2	...	5.2	18.1	112.2	159.6
Putnam	202.7	...	14.5	4.4	69.4	114.5	708.7	...	62.4	12.6	263.4	370.4
Scott	490.1	16.9	82.4	7.8	98.5	284.6	1565.4	64.3	298.4	34.2	266.3	902.3
Sequatchie	134.4	2.1	45.7	6.2	20.9	59.4	371.9	1.5	129.8	28.9	52.7	159.0
Van Buren	149.7	2.7	31.7	7.8	37.4	70.0	441.1	2.0	56.0	39.9	125.4	217.9
Warren	111.6	...	...	...	27.1	84.5	370.5	...	...	...	109.2	261.2
White	198.3	21.4	3.1	1.5	62.9	109.4	665.3	20.0	10.8	2.7	222.4	409.4
All counties	3998.8	91.7	660.2	79.5	922.1	2245.2	12882.5	146.8	2276.9	301.1	2989.2	7168.5

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[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 16–*Volume of timber on timberland by class of timber and species group, Plateau Counties, Tennessee, 1989*

Class of timber	All species	Softwood			Hardwood	
		Pine				
		Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet					
Sawtimber trees:						
Saw-log portion	2156.8	28.1	390.1	55.1	499.0	1184.4
Upper-stem portion	449.2	5.5	69.0	7.4	104.0	263.2
Total	2605.9	33.7	459.2	62.5	603.1	1447.5
Poletimber trees	1392.8	58.1	201.0	17.0	319.1	797.7
All growing-stock trees	3998.8	91.7	660.2	79.5	922.1	2245.2
Rough trees:						
Sawtimber size	109.0	...	3.1	2.6	24.2	79.1
Poletimber size	127.6	...	2.3	0.9	24.5	100.0
Total	236.6	...	5.3	3.5	48.7	179.1
Rotten trees:						
Sawtimber size	92.6	...	0.4	0.5	28.1	63.6
Poletimber size	7.7	...	...	0.1	3.5	4.1
Total	100.3	...	0.4	0.6	31.6	67.7
Salvable dead trees:						
Sawtimber size	16.4	...	8.6	...	...	7.7
Poletimber size	14.5	...	3.1	0.2	...	11.1
Total	30.9	...	11.8	0.2	...	18.8
All classes	4366.6	91.7	677.7	83.9	1002.3	2510.9

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 17–*Volume of live trees and growing stock on timberland by ownership class and species group, Plateau Counties, Tennessee, 1989*

Ownership class	Live trees						Growing stock					
	All species	Softwood			Hardwood		All species	Softwood			Hardwood	
		Pine						Pine				
		Planted	Natural	Other	Soft[1]	Hard[2]		Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet											
Other public	529.9	...	113.0	27.4	95.7	293.9	497.5	...	112.2	26.4	87.9	271.0
Forest industry	401.1	67.5	92.5	5.9	68.1	167.0	374.1	67.5	91.4	5.5	61.1	148.7
Forest industry-leased	13.9	...	...	...	2.5	11.4	12.0	...	...	...	2.5	9.6
Other private	3390.7	24.3	460.4	50.4	836.1	2019.7	3115.1	24.3	456.6	47.5	770.7	1816.1
All ownerships	4335.7	91.7	665.9	83.7	1002.3	2492.1	3998.8	91.7	660.2	79.5	922.1	2245.2

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 18–*Average net annual growth of growing stock and sawtimber on timberland by county and species group, Plateau Counties, Tennessee, 1989*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Bledsoe	10.6	2.0	1.8	0.1	1.5	5.2	26.0	1.4	6.1	0.4	3.6	14.5
Campbell	10.2	...	0.8	0.2	4.4	4.8	56.9	...	4.6	1.4	20.0	30.8
Cumberland	12.8	0.6	3.2	0.2	2.6	6.2	45.5	0.6	13.4	1.1	8.0	22.4
Fentress	12.9	0.9	3.2	0.7	3.0	5.2	44.2	1.0	10.0	2.0	10.4	20.8
Franklin	4.3	...	...	0.2	0.6	3.5	17.9	...	...	0.8	3.3	13.7
Grundy	8.5	...	1.4	...	1.9	5.2	25.0	...	3.8	0.2	5.0	16.0
Marion	9.6	0.1	1.0	0.2	2.2	6.1	28.2	...	0.5	0.4	5.7	21.7
Morgan	17.9	...	4.6	0.1	4.8	8.4	79.1	...	20.2	0.7	18.2	40.1
Overton	10.3	...	0.8	0.1	4.4	5.0	52.9	...	4.5	0.4	23.9	24.1
Pickett	2.5	...	0.1	0.2	0.9	1.3	7.9	...	0.4	0.6	3.7	3.2
Putnam	10.5	...	...	0.3	4.0	6.1	47.8	...	0.4	1.1	19.3	26.9
Scott	16.9	0.9	1.1	0.2	4.0	10.7	73.4	5.0	8.7	1.2	11.7	46.9
Sequatchie	3.8	0.5	1.6	0.1	0.7	0.9	10.3	1.7	3.9	0.4	2.3	2.0
Van Buren	6.7	0.3	1.5	0.2	2.1	2.6	18.5	0.2	2.7	1.1	6.9	7.6
Warren	4.1	...	...	-0.1	0.9	3.3	17.3	...	...	-0.3	5.2	12.4
White	11.1	2.0	0.1	0.1	3.5	5.4	39.3	2.1	0.3	0.3	12.2	24.4
All counties	152.7	7.3	21.2	2.9	41.3	79.9	590.4	12.1	79.4	11.7	159.5	327.7

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 19–*Average net annual removals of growing stock and sawtimber on timberland by county and species group, Plateau Counties, Tennessee, 1989*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Bledsoe	0.5	...	0.3	...	...	0.2	1.0	...	0.6	...	...	0.4
Campbell	2.5	...	0.2	...	0.7	1.6	10.4	...	0.9	...	3.3	6.2
Cumberland	5.7	0.5	0.9	...	0.7	3.5	21.2	0.6	4.0	...	2.9	13.6
Fentress	3.4	...	1.6	0.1	0.5	1.2	13.4	...	5.7	0.4	1.3	6.0
Franklin	5.5	...	...	0.2	0.2	5.2	27.0	...	...	0.5	1.4	25.1
Grundy	5.2	...	1.0	...	0.4	3.7	15.7	...	2.3	...	1.6	11.8
Marion	4.0	...	0.6	...	0.4	2.9	15.6	...	...	...	1.5	14.1
Morgan	3.4	...	0.4	...	1.7	1.3	10.7	...	1.7	...	4.5	4.6
Overton	1.5	...	...	...	0.2	1.3	6.4	...	...	...	...	6.4
Pickett	0.2	...	0.2	...	...	...	0.4	...	0.4	...	...	...
Putnam	3.1	...	...	...	1.2	1.9	14.2	...	...	...	6.1	8.2
Scott	5.3	...	2.3	0.1	1.4	1.6	20.4	...	9.2	0.4	5.0	5.8
Sequatchie	0.6	...	0.1	...	...	0.4	1.1	...	...	...	...	1.1
Van Buren	1.9	...	0.4	...	0.4	1.1	8.1	...	0.9	...	1.8	5.4
Warren	2.2	...	...	...	0.6	1.5	9.4	...	...	...	3.5	5.9
White	3.8	...	0.1	...	1.1	2.6	18.1	...	...	...	6.2	11.9
All counties	48.6	0.5	8.1	0.3	9.5	30.2	193.2	0.6	25.6	1.2	39.2	126.5

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 20–*Average net annual growth and average annual removals of growing stock on timberland by species, Plateau Counties, Tennessee, 1989*

Species	Growth	Removals
	Million cubic feet	
Yellow pines	25.4	8.6
Eastern white-red pines	3.1	0.1
Other softwoods	2.9	0.3
Total softwoods	31.4	8.9
Select white-red oaks	25.8	8.3
Other white-red oaks	29.5	11.9
Hickory	7.5	5.8
Yellow birch	0.1	0.2
Hard maple	8.6	2.3
Sweetgum	1.3	0.3
Ash-walnut-black cherry	4.9	1.3
Yellow-poplar	22.0	5.7
Other hardwoods	21.5	3.9
Total hardwoods	121.3	39.7
All species	152.7	48.6

Table 21–*Average net annual growth and average annual removals of sawtimber on timberland by species, Plateau Counties, Tennessee, 1989*

Species	Growth	Removals
	Million board feet	
Yellow pines	75.8	25.8
Eastern white-red pines	15.8	0.4
Other softwoods	11.7	1.2
Total softwoods	103.2	27.5
Select white-red oaks	106.4	33.6
Other white-red oaks	120.9	47.0
Hickory	34.7	27.7
Yellow birch	0.1	0.3
Hard maple	32.2	10.5
Sweetgum	4.0	1.1
Ash-walnut-black cherry	17.8	5.6
Yellow-poplar	99.8	26.4
Other hardwoods	71.2	13.3
Total hardwoods	487.2	165.7
All species	590.4	193.2

Table 22–*Average annual mortality of growing stock and sawtimber on timberland by species, Plateau Counties, Tennessee, 1989*

Species	Growing stock	Sawtimber
	Million cubic feet	*Million board feet*
Yellow pines	7.2	20.3
Eastern white-red pines	0.6	3.1
Other softwoods	0.3	1.3
Total softwoods	8.2	24.7
Select white-red oaks	3.0	8.2
Other white-red oaks	8.4	21.4
Hickory	4.5	11.0
Hard maple	0.3	0.7
Sweetgum	0.3	1.1
Ash-walnut-black cherry	0.6	1.8
Yellow-poplar	2.1	6.6
Other hardwoods	3.9	10.2
Total hardwoods	23.0	60.9
All species	31.2	85.6

Table 23–*Average net annual growth and average annual removals of growing stock on timberland by ownership class and species group, Plateau Counties, Tennessee, 1989*

	Growth						Removals					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet											
Other public	12.8	...	1.7	0.8	2.3	7.9	2.7	...	0.1	0.1	1.3	1.3
Forest industry	19.7	6.1	4.6	0.2	3.0	5.8	4.9	0.5	2.5	...	0.1	1.8
Forest industry-leased	0.7	...	...	...	0.2	0.5	0.5	...	...	...	0.1	0.5
Other private	119.5	1.2	14.9	1.8	35.8	65.6	40.5	...	5.6	0.2	8.0	26.6
All ownerships	152.7	7.3	21.2	2.9	41.3	79.9	48.6	0.5	8.1	0.3	9.5	30.2

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 24–*Average net annual growth and average annual removals of sawtimber on timberland by ownership class and species group, Plateau Counties, Tennessee, 1989*

	Growth						Removals					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million board feet											
Other public	51.9	...	7.5	3.1	8.2	33.2	8.5	...	0.4	0.4	3.5	4.2
Forest industry	46.8	5.6	12.3	1.0	10.3	17.5	14.7	0.6	7.0	0.1	0.5	6.4
Forest industry-leased	3.9	...	...	...	1.0	2.9	2.6	...	...	...	0.3	2.4
Other private	487.8	6.5	59.6	7.6	140.0	274.1	167.4	...	18.2	0.7	35.0	113.5
All ownerships	590.4	12.1	79.4	11.7	159.5	327.7	193.2	0.6	25.6	1.2	39.2	126.5

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 25–*Volume of sawtimber on timberland by species and tree grade, Plateau Counties, Tennessee, 1989*

Species	All grades	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
	Million board feet					
Yellow pines	2089.8	280.4	216.5	1549.8	...	43.0
Redcedar	43.1	41.0	...	...	...	2.1
Other softwoods	591.9	93.2	167.9	309.4	6.7	14.7
Total softwoods	2724.8	414.7	384.5	1859.2	6.7	59.7
Select white-red oaks	2207.8	197.2	474.9	929.7	482.7	123.3
Other white-red oaks	2751.9	191.9	400.4	1152.4	856.9	150.4
Hickory	1193.9	91.6	226.8	603.1	204.8	67.6
Yellow birch	1.1	...	...	1.1	...	...
Hard maple	440.5	13.1	76.5	204.7	96.4	49.9
Sweetgum	77.1	3.9	15.7	44.3	5.8	7.3
Tupelo and blackgum	163.7	1.4	28.4	71.9	24.6	37.5
Ash-walnut-black cherry	304.8	39.0	68.3	141.6	23.5	32.4
Yellow-poplar	1892.3	248.5	359.3	806.3	358.6	119.7
Other hardwoods	1124.7	48.9	108.8	495.0	308.5	163.4
Total hardwoods	10157.7	835.4	1759.0	4450.1	2361.8	751.3
All species	12882.5	1250.1	2143.5	6309.3	2368.5	811.0

Supplemental Tables 26-40

Table 26–*Area of timberland by stand age, forest type group and type of regeneration, Plateau Counties, Tennessee, 1989*

Stand age class	Pine		Oak-pine		Other hardwood types	
	Artificial	Natural	Artificial	Natural	Artificial	Natural
	Thousand acres					
1-10	45.8	11.2	...	16.8	5.8	16.5
11-20	40.5	...	...	...	...	22.7
21-30	28.3	...	...	...	5.8	...
31-40	...	17.5	...	...	...	...
41-50	...	5.8	...	...	...	...
>50	...	...	5.8	...	...	...
Mixed	5.6	194.2	...	368.8	...	2267.9
Total	120.3	228.7	5.8	385.6	11.6	2307.0

Table 27–*Volume of softwood growing stock on timberland by forest type, Plateau Counties, Tennessee, 1989*

		Forest type group				
			Loblolly-shortleaf pine			
County	Total	White-red-jack pine	Planted	Natural	Oak-pine	Oak-hickory
	Million cubic feet					
Bledsoe	70.0	...	19.2	28.3	12.6	9.9
Campbell	56.4	...	...	25.1	21.9	9.3
Cumberland	123.1	8.9	9.5	38.1	36.9	29.7
Fentress	128.4	...	10.5	48.9	35.3	33.7
Franklin	4.4	...	...	...	2.5	1.9
Grundy	31.9	...	...	21.3	2.4	8.1
Marion	41.1	...	0.9	...	18.4	21.8
Morgan	89.5	...	1.2	...	57.1	31.2
Overton	31.5	...	...	15.4	9.5	6.6
Pickett	7.0	...	...	...	...	7.0
Putnam	18.9	...	...	...	12.6	6.2
Scott	107.1	16.9	...	18.4	35.2	36.6
Sequatchie	54.1	6.0	2.1	30.9	...	15.0
Van Buren	42.2	7.8	2.7	18.4	7.4	5.9
Warren	...	..	...	...	...	...
White	26.0	...	21.4	. .	3.4	1.2
All counties	831.4	39.7	67.5	245.0	255.3	223.9

Table 28–*Volume of hardwood growing stock on timberland by forest type, Plateau Counties, Tennessee, 1989*

		Forest type group					
			Loblolly-shortleaf pine				
County	Total	White-red-jack pine	Planted	Natural	Oak-pine	Oak-hickory	Oak-gum-cypress
	Million cubic feet						
Bledsoe	117.6	...	0.8	2.9	14.8	99.1	...
Campbell	297.6	...	...	5.9	14.9	276.9	...
Cumberland	295.2	5.0	0.5	5.2	39.7	244.9	...
Fentress	235.1	...	...	7.5	39.9	187.7	...
Franklin	171.4	...	...	...	3.0	168.4	...
Grundy	162.5	...	...	4.7	6.3	151.5	...
Marion	224.3	...	...	...	18.3	202.1	3.9
Morgan	279.2	...	...	...	59.5	219.7	...
Overton	259.9	...	...	2.2	12.7	245.0	...
Pickett	85.9	...	...	...	...	85.9	...
Putnam	183.9	...	...	0.3	7.6	176.0	...
Scott	383.1	4.0	...	6.8	25.0	347.2	...
Sequatchie	80.3	1.5	...	11.2	...	67.7	...
Van Buren	107.5	4.9	0.2	2.3	4.3	95.8	...
Warren	111.6	...	...	...	0.5	103.1	8.0
White	172.3	...	1.8	...	4.1	162.4	4.0
All counties	3167.4	15.4	3.3	48.9	250.6	2833.2	16.0

Table 29–*Volume of softwood growing stock in the saw-log portion of sawtimber trees on timberland by forest type, Plateau Counties, Tennessee, 1989*

County	Total	Forest type group				
		White-red-jack pine	Loblolly-shortleaf pine		Oak-pine	Oak hickory
			Planted	Natural		
	Million cubic feet					
Bledsoe	33.3	...	2.6	14.9	10.3	5.4
Campbell	33.2	...	...	15.0	12.4	5.8
Cumberland	74.4	6.4	0.4	22.7	24.7	20.3
Fentress	67.9	...	2.9	19.7	23.8	21.5
Franklin	1.3	...	...	...	0.6	0.6
Grundy	12.1	...	...	7.5	0.7	3.9
Marion	27.2	...	...	...	12.4	14.8
Morgan	59.3	...	...	...	34.9	24.4
Overton	23.3	...	...	13.0	6.0	4.3
Pickett	4.1	...	...	...	...	4.1
Putnam	13.9	...	...	...	9.2	4.6
Scott	68.7	11.5	...	10.4	21.2	25.6
Sequatchie	30.1	4.6	0.3	15.4	...	9.8
Van Buren	17.8	6.8	0.4	6.7	1.6	2.3
Warren	...	...	...	...	...	...
White	7.0	...	4.3	...	2.0	0.7
All counties	473.4	29.2	11.0	125.4	159.7	148.1

Table 30–*Volume of hardwood growing stock in the saw-log portion of sawtimber trees on timberland by forest type, Plateau Counties, Tennessee, 1989*

County	Total	Forest type group					
		White-red-jack pine	Loblolly-shortleaf pine		Oak-pine	Oak-hickory	Oak-gum cypress
			Planted	Natural			
	Million cubic feet						
Bledsoe	48.3	...	...	0.8	5.5	42.1	...
Campbell	186.7	...	...	2.6	8.4	175.6	...
Cumberland	142.7	3.0	...	2.4	19.4	117.9	...
Fentress	107.6	...	...	2.4	12.4	92.9	...
Franklin	93.2	...	...	...	0.6	92.6	...
Grundy	69.6	...	...	1.9	2.3	65.4	...
Marion	118.1	...	...	...	9.3	106.3	2.5
Morgan	160.0	...	...	...	34.1	125.9	...
Overton	155.1	...	...	2.0	6.7	146.4	...
Pickett	44.3	...	...	...	...	44.3	...
Putnam	106.4	...	...	...	3.0	103.4	...
Scott	188.8	3.1	...	1.7	8.9	175.0	...
Sequatchie	36.2	...	...	4.5	...	31.8	...
Van Buren	57.2	3.2	...	0.7	0.9	52.3	...
Warren	63.4	...	...	...	0.4	57.8	5.1
White	105.5	...	0.7	...	1.9	102.3	0.6
All counties	1683.4	9.4	0.7	19.0	113.9	1532.1	8.2

Table 31–*Volume of timber on timberland by county, class of timber and species group, Plateau Counties, Tennessee, 1989*

County	All classes	Growing stock		Rough		Rotten	
		Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
	Million cubic feet						
Bledsoe	200.1	70.0	117.6	...	10.3	...	2.3
Campbell	385.1	56.4	297.6	0.7	20.9	...	9.5
Cumberland	446.6	123.1	295.2	2.9	18.9	...	6.4
Fentress	381.1	128.4	235.1	0.4	13.4	0.3	3.4
Franklin	203.5	4.4	171.4	0.6	15.0	0.1	12.0
Grundy	223.1	31.9	162.5	0.7	13.0	0.4	14.6
Marion	303.8	41.1	224.3	0.5	26.9	...	10.9
Morgan	393.9	89.5	279.2	...	17.3	0.2	7.7
Overton	305.8	31.5	259.9	0.6	12.0	...	1.9
Pickett	100.8	7.0	85.9	0.3	4.5	...	3.1
Putnam	219.6	18.9	183.9	0.3	13.4	...	3.2
Scott	524.1	107.1	383.1	0.6	19.5	...	13.9
Sequatchie	148.2	54.1	80.3	0.8	10.5	...	2.6
Van Buren	160.1	42.2	107.5	...	8.7	...	1.7
Warren	134.0	...	111.6	0.5	18.3	...	3.6
White	206.0	26.0	172.3	...	5.2	...	2.4
All counties	4335.7	831.4	3167.4	8.8	227.8	1.1	99.3

Table 32–*Number of live trees on timberland by detailed species and diameter class, Plateau Counties, Tennessee, 1989*

		Diameter class (inches at breast height)											
Species	All classes	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
						Thousand trees							
Shortleaf pine	24514	3701	2666	4360	5961	3989	2607	874	250	87	11	9	...
Loblolly pine	48674	6174	17298	15924	6729	1729	489	215	17	25	44	30	...
Virginia pine	100543	38413	20444	16023	11894	6341	4307	2174	633	223	69	24	...
Pitch pine	559	534	...	...	...	...	25	...	...	...	...	...	...
E. white pine	24103	15979	4186	827	1015	607	510	368	216	115	127	134	19
Redcedar	20421	10396	5051	3026	741	835	254	105	13	...	...	...	...
Hemlock-spruce	22624	13838	4346	1904	555	528	401	406	231	234	67	115	...
Total softwoods	241438	89033	53989	42064	26894	14029	8595	4140	1360	684	318	312	19
Select white oaks	197761	84661	56666	23342	11501	8530	5115	3533	2029	1259	617	494	14
Select red oaks	14542	4233	2052	1724	1721	1268	916	836	697	402	366	299	27
Other white oaks	74726	22756	14852	10359	9044	6185	4722	3050	1766	877	507	497	110
Other red oaks	100946	32810	22469	15446	10063	6103	5209	3644	2490	1400	732	574	7
Other hickories	130926	70105	27762	9104	8686	6583	4189	2222	1159	601	281	212	21
Persimmon	3903	2726	534	271	177	170	25	...	...	...	...	...	...
Hard maple	81126	46678	20194	5075	3750	2267	1390	652	461	241	199	176	42
Soft maple	314994	234881	47286	14899	8338	3726	2647	1366	866	509	275	202	...
Boxelder	1134	1058	...	...	76	...	...	...	...	...	...	...	...
Beech	17672	11437	1546	1289	967	678	401	254	188	307	122	410	72
Sweetgum	13178	5917	3091	1786	1156	543	333	160	122	12	31	25	3
Blackgum	108878	80225	19645	3794	1925	1176	634	621	459	193	124	73	9
White ash	24047	12828	5218	2459	1492	834	468	367	195	76	30	79	...
Other ashes	10156	5352	1978	1865	132	385	193	94	78	37	19	22	...
Sycamore	574	...	...	157	114	111	54	61	43	14	12	8	...
Basswood	9406	7494	...	222	579	360	281	80	189	126	52	22	...
Yellow-poplar	75363	35329	10969	7525	5956	4941	3646	2969	1685	1190	609	496	47
Magnolia	2605	1648	...	98	268	324	...	90	115	14	40	8	...
Willow	1502	1502	...	...	...	...	...	...	...	...	...	...	...
Black walnut	774	...	...	...	239	127	193	161	14	28	...	8	4
Black cherry	17252	11958	2044	1037	978	529	298	185	130	50	30	13	...
American elm	3571	2545	627	128	78	66	80	23	...	...	9	15	...
Other elms	15954	11916	2550	871	331	80	61	93	33	...	9	9	...
River birch	4527	549	3611	101	204	...	24	21	...	..	...	16	...
Other birches	12335	7950	2194	1710	341	75	...	34	17	14	...	...	...
Hackberry	655	516	...	...	60	80	...	...	...	...	...	...	...
Black locust	22517	12704	6826	998	794	582	303	172	46	73	19	...	...
Other locusts	534	534	...	...	...	...	...	...	...	...	...	...	...
Sassafras	48184	35956	8080	1780	1130	547	438	102	46	47	45	13	...
Dogwood	231234	189113	37096	4583	417	...	26	...	...	...	...	...	...
Holly	22885	19603	2659	498	76	49	...	...	...	...	...	...	...
Other commercial	3643	1549	524	331	517	219	193	147	58	53	29	22	...
Total hardwoods	1567503	956533	300474	111452	71110	46538	31838	20939	12885	7524	4159	3692	358
Noncommercial	244985	167857	56097	16015	3321	1088	404	147	30	13	12	...	...
All species	2053926	1213424	410561	169531	101325	61654	40837	25226	14275	8221	4490	4004	377

Table 33—*Number of growing-stock trees on timberland by detailed species and diameter class, Plateau Counties, Tennessee, 1989*

Species	All classes	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
		Diameter class (inches at breast height)									
	Thousand trees										
Shortleaf pine	18016	4360	5830	3989	2607	874	250	87	11	9	...
Loblolly pine	25082	15924	6655	1682	489	215	17	25	44	30	...
Virginia pine	41222	16023	11688	6217	4279	2132	616	175	69	24	...
Pitch pine	25	...	...	...	25	...	...	...	...	...	...
E. white pine	3911	827	1015	607	483	368	216	115	127	134	19
Redcedar	4184	2497	741	621	226	86	13	...	...	...	...
Hemlock-spruce	4227	1784	555	482	375	406	214	234	67	110	...
Total softwoods	96668	41415	26483	13598	8485	4080	1326	635	318	307	19
Select white oaks	51794	20626	11169	8158	4664	3315	1901	1075	508	375	5
Select red oaks	7606	1516	1589	1114	883	793	680	402	347	257	25
Other white oaks	33022	9488	8483	5601	4075	2473	1480	697	365	331	30
Other red oaks	42130	14560	9382	5745	4654	3272	2227	1209	624	457	...
Other hickories	30680	8086	8093	6432	3902	2060	1095	525	271	195	21
Persimmon	643	271	177	170	25	...	...	...	...	...	...
Hard maple	12060	3914	3261	2132	1259	542	429	229	199	92	4
Soft maple	26182	12141	6985	2820	2010	1084	516	340	174	113	...
Boxelder	76	...	76	...	...	...	...	...	...	...	...
Beech	3391	788	804	540	248	216	156	243	94	266	35
Sweetgum	3771	1606	1096	432	307	160	109	12	31	17	3
Blackgum	7429	3277	1726	878	525	458	350	143	31	37	4
White ash	5021	2006	1263	795	365	290	180	64	19	40	...
Other ashes	2442	1640	132	351	107	76	78	23	19	14	
Sycamore	311	...	114	75	23	39	27	14	12	8	...
Basswood	1573	84	579	292	281	80	173	37	32	15	...
Yellow-poplar	28111	7001	5883	4777	3564	2949	1665	1166	599	481	25
Magnolia	923	98	268	324	...	90	82	14	40	8	...
Black walnut	733	...	239	127	169	143	14	28	...	8	4
Black cherry	2883	910	896	495	218	168	112	50	21	13	...
American elm	250	128	...	33	52	23	...	...	...	15	...
Other elms	1102	590	263	80	33	93	33	...	9	...	...
River birch	345	101	204	...	24	...	...	...	...	16	...
Other birches	1730	1392	264	41	...	34	...	...	...	...	...
Hackberry	140	...	60	80	...	...	...	...	...	...	...
Black locust	1987	565	599	393	217	154	15	34	10	...	...
Sassafras	2909	1246	820	302	364	83	46	24	10	13	...
Dogwood	2195	2095	75	...	26	...	...	...	...	...	...
Holly	492	368	76	49	...	...	...	...	...	...	...
Other commercial	1187	212	372	173	165	129	58	53	19	6	...
Total hardwoods	273119	94709	64946	42407	28158	18725	11426	6381	3435	2776	157
All species	369787	136124	91429	56005	36643	22805	12752	7016	3753	3083	176

Table 34–*Volume of growing-stock trees on timberland by detailed species and diameter class, Plateau Counties, Tennessee, 1989*

Species	All classes	Diameter class (inches at breast height) 5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet										
Shortleaf pine	200.2	12.8	42.1	53.6	51.1	25.4	9.5	4.4	0.8	0.6	...
Loblolly pine	86.7	28.1	29.6	13.4	5.8	4.7	0.3	0.9	2.2	1.7	...
Virginia pine	392.4	53.2	85.0	79.5	81.0	57.5	22.8	7.6	4.4	1.4	...
Pitch pine	0.6	...	...	...	0.6	...	...	...	...	...	...
E. white pine	72.0	2.0	6.3	7.4	9.0	9.3	7.2	5.7	7.8	13.6	3.7
Redcedar	20.8	6.1	4.1	5.7	3.2	1.5	0.2	...	...	...	...
Hemlock-spruce	58.7	3.9	2.8	5.0	7.1	10.0	7.5	9.7	4.0	8.6	...
Total softwoods	831.4	106.1	170.0	164.7	157.7	108.3	47.5	28.4	19.1	25.9	3.7
Select white oaks	545.4	56.9	70.0	93.3	85.3	81.2	64.5	45.1	25.7	22.6	0.6
Select red oaks	148.7	5.0	10.1	12.6	15.4	20.8	23.2	17.7	19.7	20.6	3.6
Other white oaks	361.7	25.3	46.0	57.2	66.3	54.5	45.6	27.5	17.1	20.0	2.1
Other red oaks	478.5	36.7	53.6	58.2	73.9	75.1	69.2	49.7	31.9	30.0	...
Other hickories	376.9	21.9	46.5	73.4	76.3	54.5	41.5	26.4	16.4	17.0	3.1
Persimmon	3.5	0.3	1.0	1.7	0.4	...	...	...	...	...	...
Hard maple	148.2	11.1	22.7	26.9	23.5	15.6	16.1	12.1	11.8	7.9	0.6
Soft maple	210.4	34.6	42.0	32.3	32.8	23.9	15.6	12.8	9.4	6.9	...
Boxelder	0.2	...	0.2	...	...	...	...	...	...	...	...
Beech	70.3	2.5	5.6	6.2	3.6	5.6	4.9	10.0	4.4	23.2	4.2
Sweetgum	31.2	2.9	5.4	5.2	5.8	3.4	4.2	0.6	1.7	1.2	0.6
Blackgum	56.7	6.6	8.8	7.7	7.0	9.0	8.8	4.6	1.6	2.2	0.3
White ash	49.0	4.8	7.9	9.0	6.8	7.1	5.7	3.0	0.8	3.9	...
Other ashes	20.2	4.2	0.4	4.2	2.2	2.2	3.3	1.6	1.4	0.7	...
Sycamore	5.9	...	1.0	0.8	0.1	1.2	1.3	0.4	0.7	0.4	...
Basswood	30.6	0.4	4.9	4.4	6.7	2.5	6.6	2.1	1.6	1.4	...
Yellow-poplar	488.6	21.8	40.5	57.8	71.7	87.2	67.0	59.8	36.3	42.9	3.6
Magnolia	17.1	0.5	2.0	4.1	...	3.4	2.9	0.8	3.0	0.6	...
Black walnut	11.9	...	1.4	1.3	2.7	3.9	0.5	1.1	...	0.5	0.5
Black cherry	27.9	2.4	5.3	4.8	3.1	4.6	3.6	2.1	1.2	0.7	...
American elm	3.3	0.2	...	0.4	1.1	0.7	...	...	...	0.9	...
Other elms	9.0	1.9	1.5	0.8	0.6	2.7	0.9	...	0.6	...	...
River birch	2.9	0.2	1.2	...	0.4	...	...	...	...	1.0	...
Other birches	6.1	3.3	1.3	0.6	...	0.9	...	...	...	...	...
Hackberry	1.1	...	0.3	0.8	...	...	...	...	...	...	...
Black locust	18.2	1.8	3.0	4.0	3.4	3.6	0.5	1.4	0.4	...	...
Sassafras	21.7	2.6	4.6	3.3	6.1	1.6	1.4	0.8	0.7	0.6	...
Dogwood	4.7	4.0	0.3	...	0.5	...	...	...	...	...	...
Holly	1.3	0.7	0.2	0.3	...	...	...	...	...	...	...
Other commercial	16.2	0.5	2.2	2.0	3.1	2.9	1.7	2.0	1.1	0.7	...
Total hardwoods	3167.4	253.2	390.1	473.4	499.0	468.3	389.0	281.5	187.6	206.0	19.3
All species	3998.8	359.3	560.1	638.1	656.7	576.6	436.5	309.9	206.7	231.9	23.0

Table 35–*Volume of growing stock in the saw-log portion of sawtimber trees on timberland by detailed species and diameter class, Plateau Counties, Tennessee, 1989*

		Diameter class (inches at breast height)							
Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet								
Shortleaf pine	125.3	43.6	45.2	22.9	8.5	3.8	0.7	0.5	...
Loblolly pine	23.3	9.7	4.8	4.1	0.3	0.9	2.0	1.5	...
Virginia pine	213.7	63.4	68.2	50.5	20.0	6.6	3.8	1.2	...
Pitch pine	0.6	...	0.6	...	...	...	...	...	...
E. white pine	55.5	5.9	7.9	8.2	6.6	4.9	6.6	11.7	3.7
Redcedar	8.9	4.6	2.8	1.3	0.2	...	...	...	...
Hemlock-spruce	46.2	4.0	6.1	8.7	6.7	9.1	3.7	7.9	...
Total softwoods	473.4	131.1	135.6	95.7	42.2	25.3	16.8	22.9	3.7
Select white oaks	264.8	...	64.3	66.8	53.9	38.5	22.0	18.7	0.5
Select red oaks	101.1	...	11.7	17.0	19.3	15.1	17.0	17.7	3.4
Other white oaks	188.8	...	50.6	44.3	38.2	23.4	13.8	16.7	1.7
Other red oaks	274.1	...	56.7	62.5	59.2	42.7	27.3	25.8	...
Other hickories	193.5	...	58.2	45.9	35.5	22.7	13.9	14.3	3.0
Persimmon	0.3	...	0.3	...	...	...	...	...	...
Hard maple	69.9	...	17.0	12.7	13.1	10.0	10.0	6.7	0.5
Soft maple	79.1	...	23.3	18.3	13.0	10.8	8.2	5.5	...
Beech	45.3	...	2.5	4.4	3.8	8.5	3.8	18.9	3.3
Sweetgum	13.5	...	3.8	2.6	3.6	0.6	1.5	1.1	0.4
Blackgum	28.6	...	5.5	7.6	7.8	4.1	1.5	2.0	0.3
White ash	21.5	...	5.1	5.6	4.3	2.6	0.6	3.4	...
Other ashes	9.3	...	1.5	1.6	2.8	1.5	1.3	0.6	...
Sycamore	3.2	...	...	0.9	1.0	0.3	0.6	0.4	...
Basswood	17.3	...	5.3	2.0	5.5	1.7	1.5	1.3	...
Yellow-poplar	312.3	...	52.0	72.4	59.4	53.7	32.6	38.9	3.3
Magnolia	8.9	...	...	2.8	2.3	0.7	2.5	0.5	...
Black walnut	6.7	...	1.7	3.2	0.3	0.8	...	0.3	0.5
Black cherry	11.9	...	2.2	3.6	2.6	1.6	1.2	0.7	...
American elm	1.8	...	0.9	0.3	...	...	...	0.6	...
Other elms	4.0	...	0.5	2.2	0.8	...	0.5	...	...
River birch	1.3	...	0.3	...	...	...	...	0.9	...
Other birches	0.8	...	...	0.8	...	...	...	...	...
Black locust	7.4	...	2.6	2.9	0.4	1.2	0.3	...	...
Sassafras	8.0	...	3.8	1.3	1.2	0.7	0.5	0.6	...
Dogwood	0.3	...	0.3	...	...	...	...	...	...
Other commercial	9.6	...	2.6	2.3	1.6	1.6	1.0	0.5	...
Total hardwoods	1683.4	...	372.6	384.0	329.5	242.9	161.5	176.0	16.9
All species	2156.8	131.1	508.2	479.7	371.7	268.2	178.3	198.9	20.6

Table 36–*Volume of timber on timberland by species and class of timber, Plateau Counties, Tennessee, 1989*

Species	All live	Growing stock	Rough	Rotten
	Million cubic feet			
Shortleaf pine	201.2	200.2	1.0	...
Loblolly pine	87.2	86.7	0.5	...
Virginia pine	396.6	392.4	3.8	0.4
Pitch pine	0.6	0.6	...	...
E. white pine	72.0	72.0	...	...
Redcedar	23.8	20.8	2.8	0.1
Hemlock-spruce	59.9	58.7	0.7	0.5
Total softwoods	841.3	831.4	8.8	1.1
Select white oaks	576.0	545.4	22.2	8.5
Select red oaks	154.3	148.7	3.9	1.7
Other white oaks	402.5	361.7	29.0	11.8
Other red oaks	512.1	478.5	19.8	13.8
Other hickories	392.1	376.9	11.5	3.7
Persimmon	3.5	3.5	...	...
Hard maple	167.7	148.2	8.6	10.9
Soft maple	250.3	210.4	26.6	13.4
Boxelder	0.2	0.2	...	...
Beech	87.9	70.3	6.1	11.5
Sweetgum	33.3	31.2	1.9	0.2
Blackgum	68.8	56.7	4.7	7.4
White ash	55.9	49.0	4.3	2.6
Other ashes	22.6	20.2	2.4	...
Sycamore	6.9	5.9	1.1	...
Basswood	35.2	30.6	1.2	3.4
Yellow-poplar	495.8	488.6	4.2	3.0
Magnolia	17.9	17.1	...	0.7
Black walnut	12.3	11.9	...	0.3
Black cherry	30.9	27.9	2.6	0.3
American elm	4.4	3.3	0.7	0.5
Other elms	10.1	9.0	1.1	...
River birch	3.0	2.9	0.1	...
Other birches	7.3	6.1	0.7	0.5
Hackberry	1.1	1.1	...	...
Black locust	23.2	18.2	2.6	2.4
Sassafras	26.4	21.7	3.2	1.5
Dogwood	8.8	4.7	3.9	0.2
Holly	1.6	1.3	0.3	...
Other commercial	19.0	16.2	1.8	1.1
Total hardwoods	3431.1	3167.4	164.4	99.3
Noncommercial	63.3	...	63.3	...
All species	4335.7	3998.8	236.6	100.3

Table 37–*Volume of sawtimber for tree grade 1 on timberland by detailed species and diameter class, Plateau Counties, Tennessee, 1989*

		Diameter class (inches at breast height)							
Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Shortleaf pine	266.9	78.9	90.1	57.5	14.7	17.8	5.1	2.8	...
Loblolly pine	1.2	...	1.2	...	...	...	...	...	...
Virginia pine	12.2	2.6	6.9	2.7	...	...	...	...	...
E. white pine	80.3	...	...	7.2	...	3.7	6.2	42.5	20.9
Redcedar	41.0	22.5	12.0	6.5	...	...	...	...	...
Hemlock-spruce	12.9	...	...	...	...	...	4.2	8.7	...
Total softwoods	414.7	104.1	110.2	73.9	14.7	21.5	15.5	54.0	20.9
Select white oaks	99.2	...	...	...	22.9	38.9	21.6	15.9	...
Select red oaks	98.0	...	...	...	9.6	22.6	23.5	38.7	3.6
Other white oaks	83.1	...	...	...	38.2	24.6	14.0	6.2	...
Other red oaks	108.8	...	...	...	11.8	40.1	15.9	41.0	...
Other hickories	91.6	...	...	...	15.4	30.4	12.7	24.9	8.2
Hard maple	13.1	...	...	...	...	2.5	10.6	...	...
Soft maple	12.4	...	...	...	1.4	...	3.2	7.8	...
Sweetgum	3.9	...	...	...	3.9	...	...	...	...
Blackgum	1.4	...	...	...	...	...	...	...	1.4
White ash	23.6	...	...	...	5.2	3.9	...	14.6	...
Other ashes	2.0	...	...	...	2.0	...	...	...	...
Sycamore	3.1	...	...	...	...	...	3.1	...	...
Basswood	18.0	...	...	...	8.9	4.5	...	4.6	...
Yellow-poplar	248.5	...	...	...	47.1	69.8	36.0	92.3	3.2
Black walnut	2.0	...	...	...	...	...	...	2.0	...
Black cherry	11.4	...	...	...	4.6	6.8	...	...	...
Black locust	3.3	...	...	...	...	1.3	2.0	...	...
Sassafras	1.6	...	...	...	...	...	...	1.6	...
Other commercial	10.6	...	...	...	1.9	3.4	1.9	3.4	...
Total hardwoods	835.4	...	...	...	172.9	248.7	144.5	253.0	16.4
All species	1250.1	104.1	110.2	73.9	187.6	270.2	160.0	307.0	37.2

Table 38–*Volume of sawtimber for tree grade 2 on timberland by detailed species and diameter class, Plateau Counties, Tennessee, 1989*

Species	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Shortleaf pine	175.4	55.8	72.0	27.0	17.0	3.6	...	...	...
Virginia pine	37.4	4.2	13.0	12.6	2.7	2.3	...	2.6	...
Pitch pine	3.7	...	3.7	...	...	...	...	...	...
E. white pine	149.3	15.5	15.2	14.2	21.6	25.6	28.6	28.5	...
Hemlock-spruce	18.7	...	1.8	3.1	7.2	...	...	6.6	...
Total softwoods	384.5	75.6	105.7	56.9	48.4	31.5	28.6	37.7	...
Select white oaks	317.4	...	...	76.7	89.1	80.9	36.6	34.2	...
Select red oaks	157.5	...	...	30.1	35.8	26.8	31.3	33.5	...
Other white oaks	164.8	...	...	46.8	41.3	17.9	25.0	33.7	...
Other red oaks	235.6	...	...	43.6	55.5	48.1	41.6	46.8	...
Other hickories	226.8	...	...	51.0	65.2	48.2	36.5	21.1	4.8
Hard maple	76.5	...	...	21.2	19.2	12.9	12.5	10.7	...
Soft maple	39.9	...	...	11.1	9.1	5.1	14.5	...	...
Beech	12.4	...	...	2.6	2.7	2.3	2.0	2.9	...
Sweetgum	15.7	...	...	2.7	3.6	3.4	...	6.0	...
Blackgum	28.4	...	...	8.8	14.4	2.4	2.8	...	...
White ash	36.0	...	...	16.8	7.4	5.9	...	5.9	...
Other ashes	15.7	...	...	7.8	...	...	5.1	2.8	...
Sycamore	5.5	...	...	5.5	...	...	...	...	...
Basswood	22.3	...	...	3.8	14.1	...	4.4	...	...
Yellow-poplar	359.3	...	...	72.6	109.6	85.3	41.7	50.1	...
Magnolia	7.1	...	...	...	...	...	4.1	3.0	...
Black walnut	1.6	...	...	...	1.6	...	...	...	...
Black cherry	15.0	...	...	7.9	5.2	1.9	...	...	...
Other elms	2.6	...	...	2.6	...	...	...	...	...
River birch	6.0	...	...	...	...	...	...	6.0	...
Other birches	3.1	...	...	3.1	...	...	...	...	...
Sassafras	6.3	...	...	4.8	1.5	...	...	...	...
Other commercial	3.5	...	...	3.5	...	...	...	...	...
Total hardwoods	1759.0	...	...	423.1	475.2	341.1	258.1	256.8	4.8
All species	2143.5	75.6	105.7	480.0	523.6	372.6	286.7	294.5	4.8

Table 39—*Volume of sawtimber for tree grade 3 on timberland by detailed species and diameter class, Plateau Counties, Tennessee, 1989*

Species	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Shortleaf pine	296.0	106.8	103.2	59.0	21.8	5.1	...	...	...
Loblolly pine	113.5	44.7	22.2	22.5	1.5	4.8	11.4	6.5	...
Virginia pine	1140.4	325.9	358.7	279.4	114.1	34.8	24.5	3.2	...
E. white pine	87.4	15.5	23.8	23.4	13.3	2.7	2.8	5.9	...
Hemlock-spruce	221.9	19.9	31.7	45.8	32.5	49.6	17.6	24.9	...
Total softwoods	1859.2	512.8	539.6	430.0	183.2	96.9	56.3	40.5	...
Select white oaks	709.3	...	244.5	204.9	116.6	84.7	26.1	29.2	3.3
Select red oaks	220.5	...	46.5	45.5	41.2	20.7	40.3	23.3	2.8
Other white oaks	552.2	...	210.4	144.0	92.5	64.8	20.2	14.9	5.3
Other red oaks	600.2	...	158.4	149.3	121.3	72.3	60.6	38.4	...
Other hickories	603.1	...	274.4	163.4	91.8	37.3	16.6	19.7	...
Persimmon	1.8	...	1.8	...	...	...	...	...	...
Hard maple	204.7	...	58.5	30.6	39.4	33.7	29.9	12.6	...
Soft maple	235.3	...	82.3	54.4	41.7	31.8	12.4	12.7	...
Beech	85.4	...	6.9	9.2	5.1	16.9	...	34.9	12.3
Sweetgum	44.3	...	20.1	6.8	10.8	...	3.8	...	2.7
Blackgum	71.9	...	24.1	20.4	16.0	5.0	3.9	2.5	...
White ash	52.0	...	29.2	5.4	9.3	6.8	1.3	...	...
Other ashes	38.6	...	8.8	1.5	15.0	10.0	3.3	...	...
Sycamore	5.9	...	...	...	5.9	...	...	...	...
Basswood	54.5	...	29.0	6.4	8.7	6.9	...	3.4	...
Yellow-poplar	806.3	...	228.2	261.1	116.8	108.7	38.9	49.9	2.7
Magnolia	30.8	...	...	11.3	7.1	...	12.4	...	...
Black walnut	31.7	...	7.9	20.5	...	3.3	...	...	...
Black cherry	19.2	...	7.4	9.2	2.7	...	...	...	...
American elm	5.4	...	2.5	1.9	...	...	...	1.1	...
Other elms	8.8	...	2.8	6.0	...	...	...	...	...
River birch	2.0	...	2.0	...	...	...	...	...	...
Other birches	1.1	...	...	1.1	...	...	...	...	...
Black locust	15.1	...	7.9	3.7	...	3.5	...	...	...
Sassafras	26.9	...	16.0	2.4	3.4	2.0	3.1	...	...
Dogwood	1.5	...	1.5	...	...	...	...	...	...
Other commercial	21.7	...	7.4	3.8	3.5	2.3	4.6	...	...
Total hardwoods	4450.1	...	1478.1	1163.1	748.7	510.9	277.6	242.6	29.2
All species	6309.3	512.8	2017.6	1593.1	931.9	607.8	333.9	283.1	29.2

Table 40–*Volume of sawtimber for tree grade 4 on timberland by detailed species and diameter class, Tennessee's Plateau Counties, 1989*

Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
E. white pine	6.7	...	2.6	1.3	...	...	2.9	...	...
Total softwoods	6.7	...	2.6	1.3	...	...	2.9	...	...
Select white oaks	378.2	...	100.0	91.2	95.5	29.8	48.0	13.8	...
Select red oaks	104.5	...	15.9	25.6	25.0	20.5	11.5	3.7	2.2
Other white oaks	238.5	...	68.6	54.4	45.3	29.5	15.1	21.9	3.7
Other red oaks	618.4	...	146.6	158.5	147.6	89.9	45.8	30.0	...
Other hickories	204.8	...	53.4	59.1	34.6	29.1	10.5	18.1	...
Hard maple	96.4	...	35.1	20.0	14.8	4.5	8.5	13.5	...
Soft maple	107.4	...	33.7	22.9	19.1	12.4	16.2	3.0	...
Beech	133.7	...	4.9	13.4	14.4	25.6	22.4	53.0	...
Sweetgum	5.8	...	...	2.8	3.1	...	...	...	...
Blackgum	24.6	...	1.5	9.6	7.3	3.1	...	3.0	...
White ash	9.8	...	3.4	6.3	...	...	...	...	...
Sycamore	1.8	...	...	...	...	1.8	...	...	...
Basswood	5.9	...	3.9	...	...	...	2.0	...	...
Yellow-poplar	358.6	...	67.3	86.8	75.1	56.6	37.3	24.4	11.1
Magnolia	7.4	...	...	7.4	...	...	...	...	...
Black walnut	1.3	...	1.3	...	...	...	...	...	...
Black cherry	12.4	...	...	4.0	2.6	1.6	4.3	...	...
American elm	2.7	...	2.7	...	...	...	...	...	...
Other elms	10.2	...	...	5.1	2.1	...	3.0	...	...
Black locust	19.6	...	5.0	12.1	2.5	...	...	...	...
Sassafras	3.0	...	1.0	...	...	...	...	1.9	...
Other commercial	17.0	...	7.6	4.7	1.9	2.8	...	...	...
Total hardwoods	2361.8	...	552.1	583.7	490.8	307.2	224.6	186.5	17.0
All species	2368.5	...	554.6	585.0	490.8	307.2	227.5	186.5	17.0

Graphics

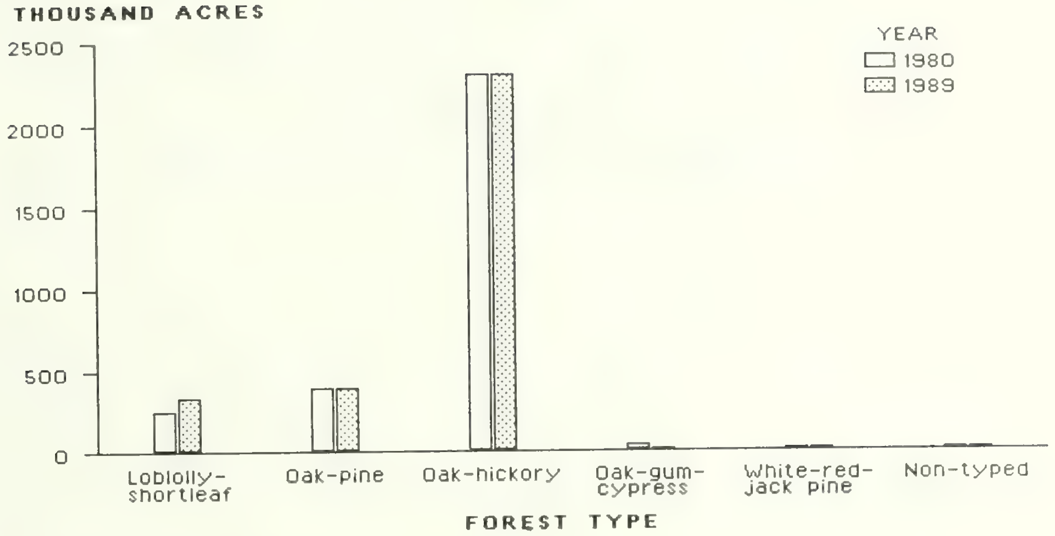

Figure 1.--Area of timberland by forest type, Plateau Counties, Tennessee, 1980 and 1989.

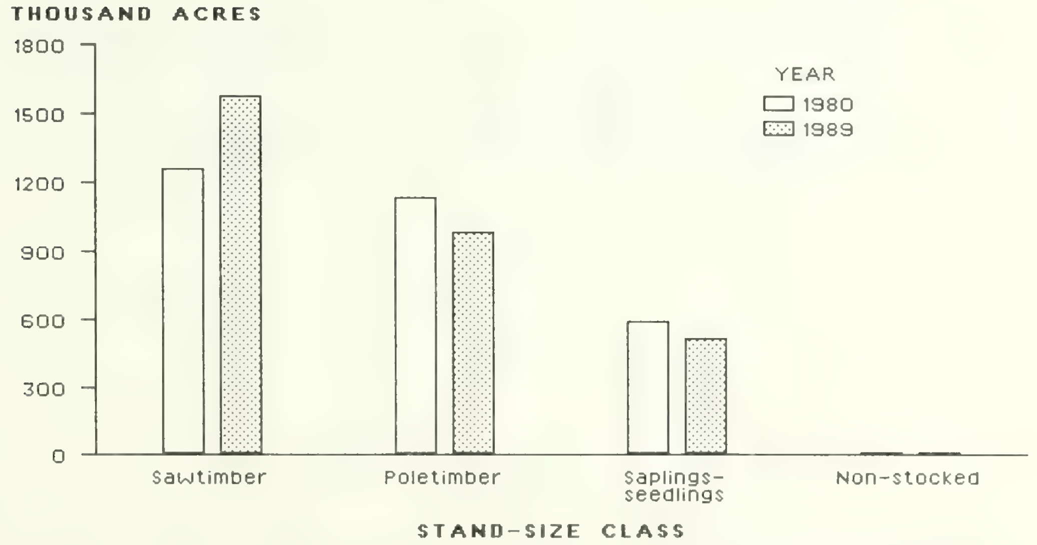

Figure 2.--Area of timberland by stand-size class, Plateau Counties, Tennessee, 1980 and 1989.

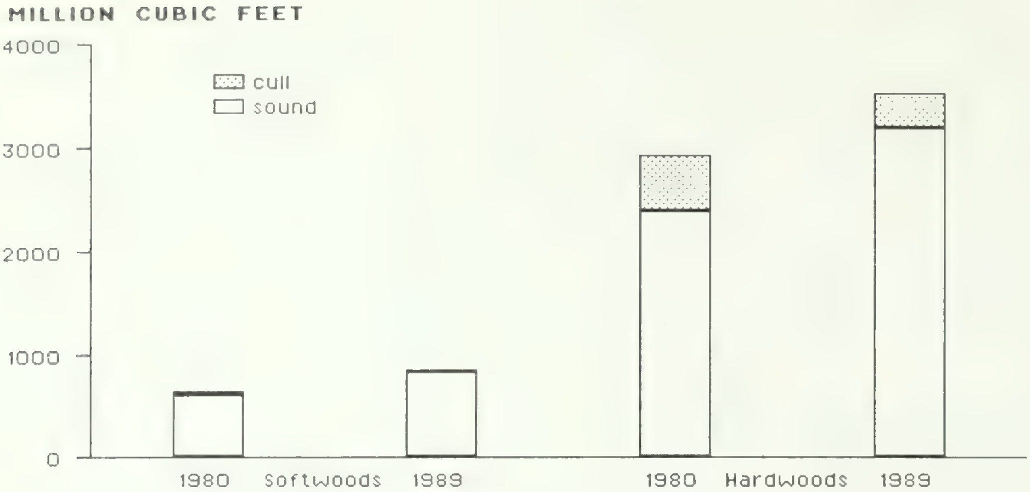

Figure 3.--Volume of timber on timberland by species group and class of timber, Plateau Counties, Tennessee, 1980 and 1989.

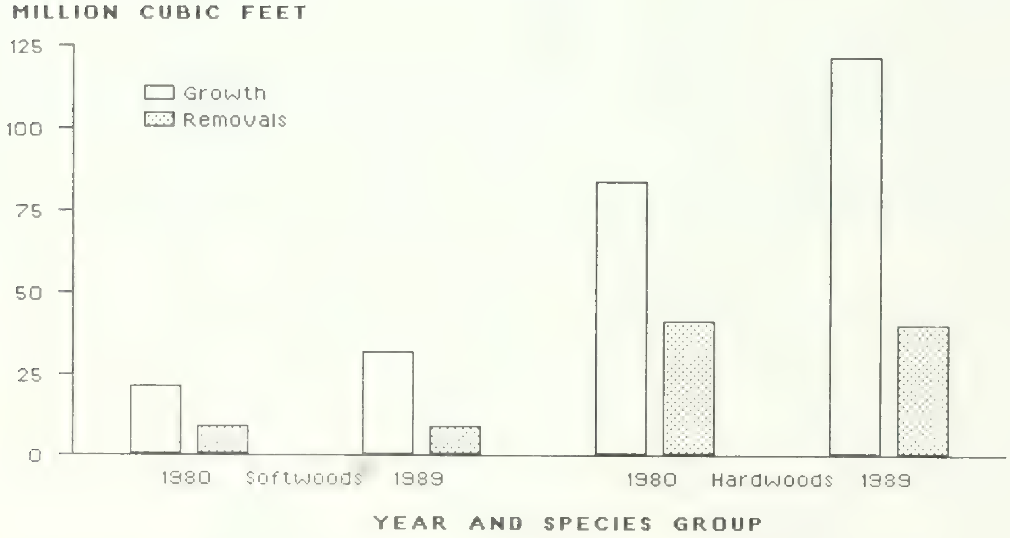

Figure 4.--Average net annual growth and average annual removals of growing stock on timberland by species group, Plateau Counties, Tennessee, 1980 and 1989.

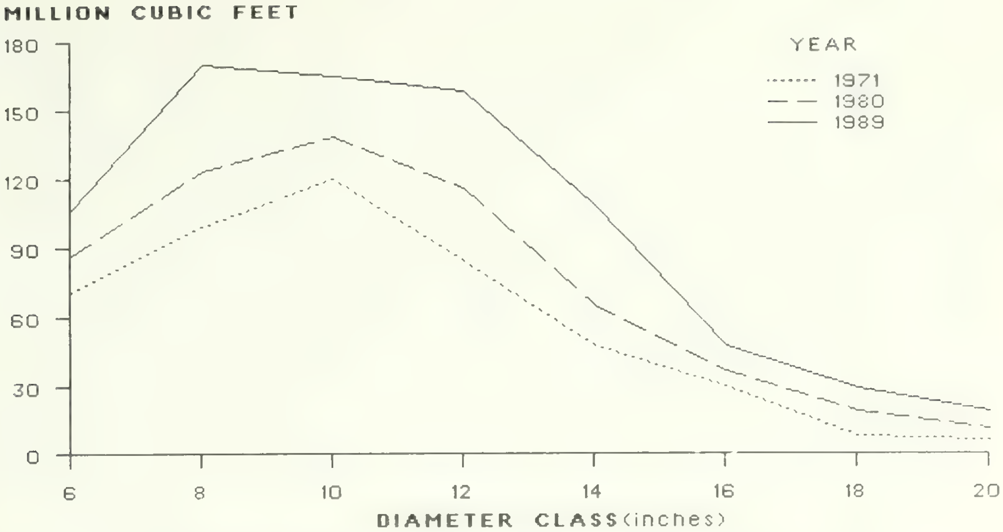

Figure 5.--Volume of softwood growing stock on timberland by diameter class, Plateau Counties, Tennessee, 1971, 1980, and 1989.

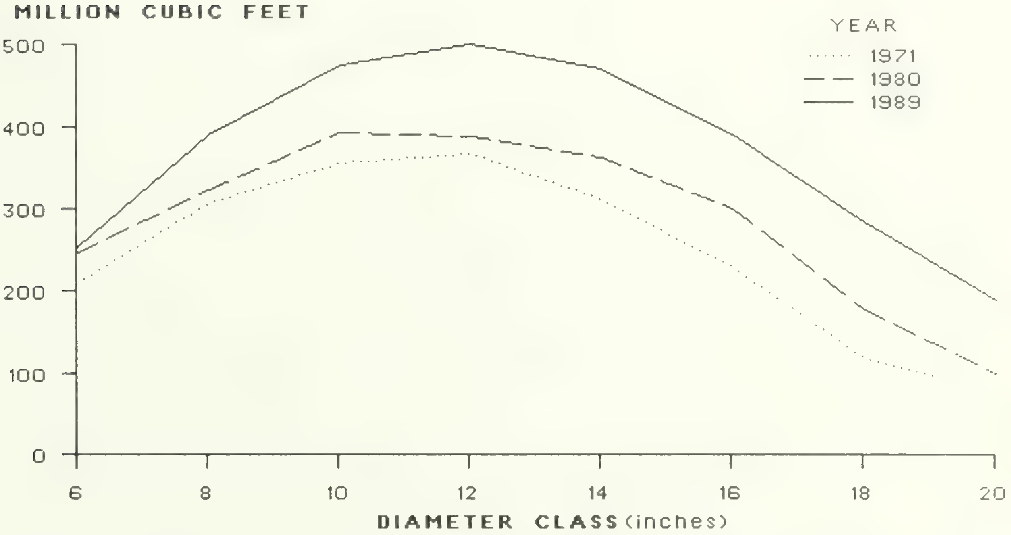

Figure 6.--Volume of hardwood growing stock on timberland by diameter class, Plateau Counties, Tennessee, 1971, 1980, and 1989.

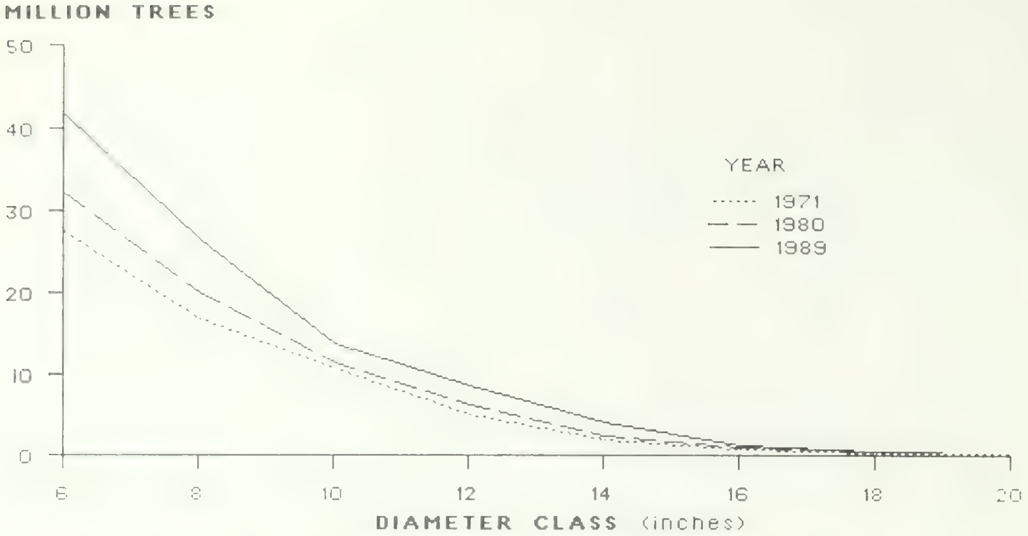

Figure 7.--Number of softwood growing-stock trees on timberland by diameter class, Plateau Counties, Tennessee, 1971, 1980, and 1989.

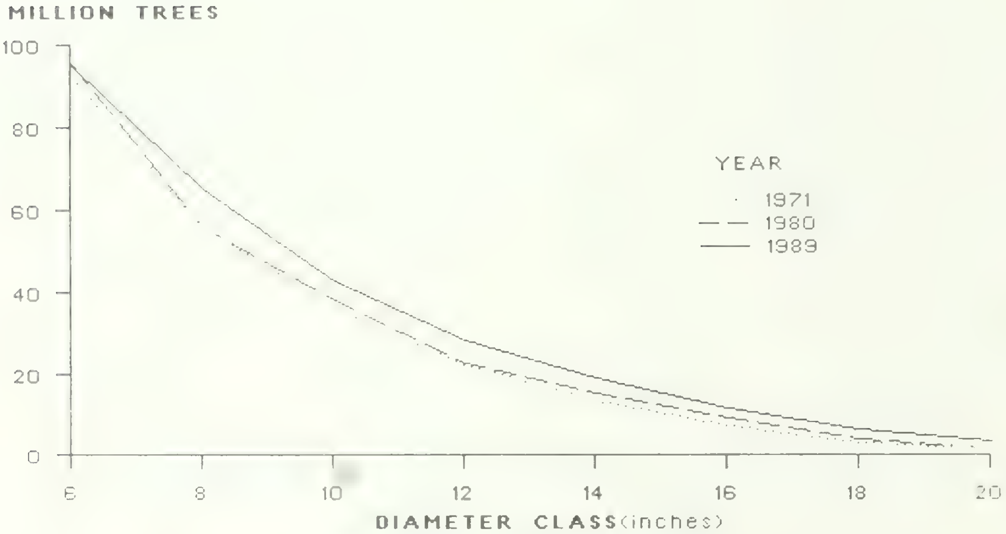

Figure 8.--Number of hardwood growing-stock trees on timberland by diameter class, Plateau Counties, Tennessee, 1971, 1980, and 1989.

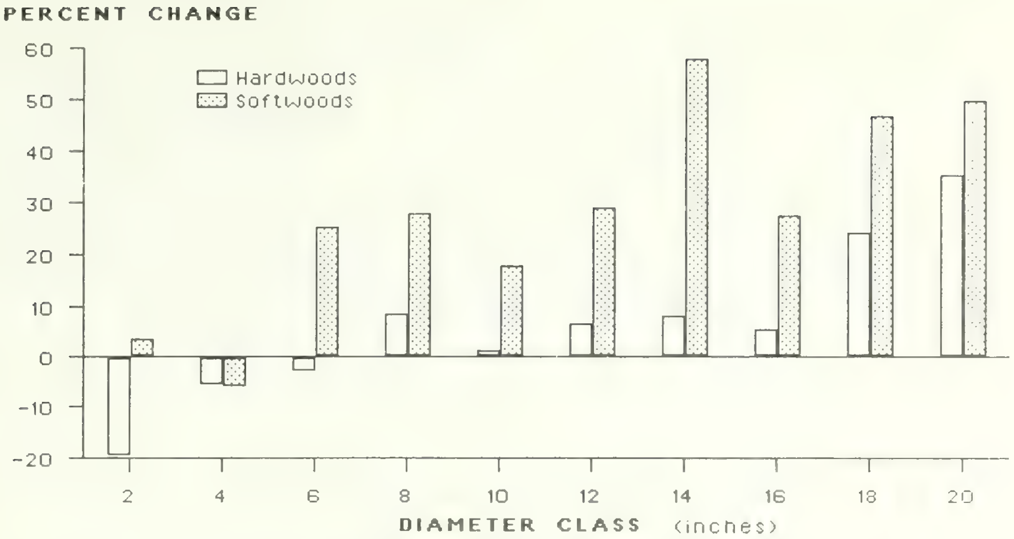

Figure 9.--Percent change in the number of live trees on timberland by species group and diameter class, Plateau Counties, Tennessee, 1980 and 1989.

ACKNOWLEDGMENTS

The Southern Station gratefully acknowledges the cooperation and assistance provided by the Tennessee Division of Forestry in collecting field data. Appreciation is also expressed for the cooperation of other public agencies and other private landowners in providing access to the sample locations.

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Tabulates forest resource information from a new inventory of the Plateau Counties of Tennessee.

Additional Keywords: Area, volume, forest type, stand size, ownership.

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Forest Resources of Mississippi

John F. Kelly, Mike Sims

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Forest Resources of Mississippi

John F. Kelly and Mike Sims

HIGHLIGHTS

Some important findings of the 1987 Mississippi forest survey are presented below. Unless otherwise noted, the comparisons are with the previous survey, which was in 1977.

- Hardwood forests are displacing pine forests on upland sites. Pine forests have declined in area by 9 percent, while oak-history forests have increased 26 percent. Oak-hickory is the dominant forest type in the State, comprising almost one-third of the timberland. Oak-pine stands have increased in area by 2 percent.

- The area of plantations has increased 50 percent to 2.8 million acres. In the South survey region, 1 out of every 4 acres of timberland is planted. Forest industry owns more planted area than either public or nonindustrial private owners.

- As stands are maturing, more area is covered by sawtimber-size stands, which increased 9 percent. Sawtimber stands now account for 48 percent of timberland; poletimber stands and sapling-seedling stands each account for about 25 percent of the area. Forest industry lands are 41 percent sapling-seedling size stands, the dominant class on this ownership.

- The presence of fewer small trees and more large trees ($\geq$13.0 inches in d.b.h.) is a sign that stands are maturing. The number of growing-stock trees has also decreased, and the number of cull trees has increased.

- Softwood cull volume has increased 43 percent and hardwood cull volume, 22 percent. The basal area of cull trees has increased 14 percent and now equals 26 percent of total basal area. The increase in cull-tree basal area has contributed to higher average stocking.

- Total softwood growing-stock volume is essentially unchanged. The inventory of softwood growing stock in the 1977 and 1987 surveys is at its highest since the forest surveys in Mississippi began. More volume is in large trees (d.b.h. $\geq$13.0 inches) and less in small trees than in 1977.

- Hardwood growing-stock volume increased 23 percent and occurred in all tree sizes except the smallest.

- Softwood sawtimber volume increased 11 percent; hardwood, 31 percent. The volume in the highest quality trees (grade 1) has decreased.

- The 10 most common tree species in Mississippi, in order of decreasing biomass weight, are loblolly pine, sweetgum, water oak, shortleaf pine, white oak, southern red oak, hickory, cherrybark oak, post oak, and blackgum.

- The chief component of timber growth is now the incremental increase in larger (survivor) trees; in the 1977 survey, growth was dominated by the movement of smaller trees into the merchantable category (ingrowth).

- Average annual softwood growing-stock growth has declined 15 percent since the 1967 to 1977 survey period, while average annual softwood removals have increased 35 percent. Softwood removals now approximate growth.

- Average annual hardwood growing-stock is 25 percent higher than in the 1967 to 1977 period; removals have increased 22 percent. Hardwood growth exceeds removals by 81 percent.

- Average annual sawtimber growth has increased for both softwoods and hardwoods, as have removals. Although growth still exceeds removals for both species groups, the margin for softwood is currently only 18 percent, down from 67 percent in the previous survey period.

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- Mortality (principally of softwoods) has increased. The volume of softwood growing-stock mortality has increased 55 percent, while hardwood has increased only 5 percent. Softwood mortality now exceeds hardwood; in the previous survey hardwood mortality was higher.

- Treatment opportunities were identified on slightly more than half the timberland. Hardwood stands generally could benefit more from treatment than pine stands, largely because they have a higher incidence of cull trees. Current growth is only 46 percent of the potential growth for fully stocked natural stands.

INTRODUCTION

This report summarizes results from the sixth forest survey of Mississippi. The survey is part of a national effort authorized by the McSweeney-McNary Act of 1928 and modified by legislation in 1974 and 1978.

The first forest survey of the State was in the 1930's, the second followed the Second World War in the 1940's (Forest Economics Staff 1946; USDA FS 1949). Subsequent surveys have been at approximately 10-year intervals (USDA FS 1958; VanSickle and VanHooser 1969; Murphy 1978). Over the years the forest surveys have changed to provide a greater variety of data. For example, data are now collected for nontimber resources, an increasingly important aspect of the State's forests. This report describes timber; a companion report will examine other resources (Rudis, 1989). A series of regional reports covers the five survey regions in Mississippi (Kelly and Hines 1987a–e).

This report describes the status and trends of forest resources in Mississippi, indicated by the 1987 forest survey. The description of resource trends concentrates on changes since the previous survey in 1977. For comparison, the 1977 survey data were reprocessed to agree with current definitions and procedures.

HISTORY OF MISSISSIPPI'S FORESTS

Forests were a dominant feature of Mississippi during the colonial period (James 1951). Longleaf pine forests extended from the coast as far north as Kemper County. In other parts of the State, shortleaf pine was common, often mixed with such hardwoods as red oaks, hickory, black gum, and chestnut. Loblolly and slash pines were present, but not to the extent that they are today. In the Delta and other bottomlands throughout the State, a variety of hardwood species grew to large sizes (James 1951).

After the State was settled and with the beginning of the cotton boom around 1800, agriculture began to play a big role in the extent and character of Mississippi's forests (James 1951). Most of the land originally used for cotton farming was in the uplands. Poor farming practices caused severe erosion of many upland fields, and these areas were abandoned and reverted to forests. This led to large-scale opening of the Delta for cotton farming, and the Delta continues to be a farming center in the State. As eroded uplands were abandoned, loblolly pine became more common, since this was often the pioneering tree species on these sites.

Until shortly after 1900, the timber economy was almost negligible. But with the exhaustion of large supplies of timber in the Lake States, lumber companies moved south and into Mississippi. In 1925 lumber production in the State peaked. After the old-growth forests were gone, the large-scale timber operations moved on, but a small timber industry remained and eventually began to grow along with the second-growth forests. Today, the timber industry is a principal component in Mississippi's economy (Porterfield and others 1978; Schallau and others 1988).

FOREST AREA

The land area of Mississippi is 30.2 million acres. Of this, nearly 17.0 million acres (56 percent) are forested, as estimated by the 1987 survey (table 1). Only 8,600 acres of the 17.0 million are reserved from timber utilization; the balance is timberland (see Appendix for definitions).

Since the first forest survey in 1934, timberland area in the State has not fluctuated greatly (table I). In 1934 there were 16.2 million acres of timberland. A high point was reached in 1957 at 17.2 million acres. Some parts of the State have changed greatly in timberland acreage, however. The Delta region now has almost 1.4 million acres of timberland, a 38-percent decrease from 1934. On the other hand, timberland in the North region has increased 37 percent.

Since 1977, timberland area has increased by 2 percent (296,800 acres). Despite this small net change, there have been land use changes involving large areas in the past 10 years (table II). There were additions to timberland amounting to 1.0 million acres since 1977. These additions were partly offset by the clearing of 699,300 acres, which yielded the net increase of 296,800 acres.

Net increases in timberland occurred everywhere except the Delta region, which lost 88,300 acres, or 6

Table I.—*Timberland area by survey region, Mississippi, 1934-1987*[1]

Survey region	Survey Date 1934	1948	1957	1967	1977	1987
	Thousand acres					
Delta	2,245.3	2,043.2	1,917.1	1,493.8	1,476.6	1,388.3
North	3,209.4	3,722.9	4,204.0	4,194.8	4,251.4	4,401.2
Central	3,484.9	3,554.6	3,792.4	3,959.5	3,879.3	4,097.0
South	4,893.2	4,746.4	4,533.7	4,489.1	4,320.7	4,329.0
Southwest	2,417.1	2,465.4	2,746.7	2,754.7	2,756.8	2,766.0
All regions	16,249.9	16,532.5	17,193.6	16,891.9	16,684.7	16,981.6

[1] Columns may not add due to rounding.

Table II.—*Changes in timberland by survey region, Mississippi, 1977-1987*[1]

Survey region	All land[2]	Timberland	Net change	Additions from: Total	Agriculture	Other[3]	Diversions to: Total	Agriculture	Other[3]
	Thousand acres								
Delta	5,584.8	1,388.3	-88.3	22.9	14.3	8.6	111.2	103.8	7.4
North	8,404.2	4,401.2	149.9	358.3	319.7	38.6	208.4	110.4	98.1
Central	5,938.5	4,097.1	217.7	303.1	271.5	31.6	85.3	44.7	40.6
South	6,179.6	4,328.9	8.3	134.1	128.0	6.1	125.8	48.9	76.9
Southwest	4,414.1	2,766.0	9.2	177.8	145.8	32.0	168.5	91.2	77.4
All regions	30,521.2	16,981.5	296.8	996.1	879.3	116.8	699.3	398.9	300.5

[1] Columns may not add due to rounding.
[2] United States Bureau of the Census, Land and Water Area of the United States.
[3] Includes urban, industrial, highway, noncommercial forest, water, rights-of-way, and other land uses.

percent. This timberland was diverted principally to agricultural uses. Elsewhere, reversion of agricultural land provided much of the additions to timberland area.

During the past 10 years, 9 counties lost at least 20,000 acres of timberland, and 11 counties gained at least 20,000 acres (fig. 1). Currently, 10 counties have at least 75 percent timberland (fig.2).

Forest Types

The dominant forest type in Mississippi continues to be oak-hickory, which covers 5.5 million acres (table III, fig. 3), a 26-percent increase since 1977. Other forest types in order of decreasing area are loblolly-shortleaf pine (a 7-percent decrease since 1977), oak-pine (2-percent decrease), oak-gum-cypress (12-percent decrease), longleaf-slash pine (20-percent decrease), and elm-ash-cottonwood (no significant change). There are also 8,100 acres of nontyped forest land (not currently stocked with trees).

The oak-hickory forest type is not dominant in all regions. Loblolly-shortleaf pine occupies more acres in the Central region, and oak-pine is more common in the South region (table III). Oak-gum-cypress forests are by far the most common in the Delta region, accounting for over one-half the total timberland. The oak-hickory type, however, clearly dominates the North and Southwest regions and is common throughout the State. Most forest types are uniformly distributed outside the Delta, except for longleaf-slash pine, which is concentrated in the extreme southeastern portion of the State.

Trends in forest type are attributable principally to natural changes and to activities by land managers. On upland sites pine forest types have declined 9 percent, while hardwood types have increased 26 percent. Many of the pine stands in existence for the past several decades are being harvested. Often the residual stands are left with a significant component of hardwoods and are not regenerated to pines (McWilliams 1988), and the resulting stands are oak-pine or oak-hickory. Additionally, 39 percent of the land that has reverted to forest is in the oak-hickory type.

The decline of the longleaf-slash pine forest type has been dramatic. Since 1957, the area occupied by this type has declined 48 percent, in contrast to the 9-percent decline of all pine types. The sharp decline has occurred primarily because land managers have favored the management of other pine species on sites that have long supported longleaf-slash pine.

The regeneration of pine stands has countered natural successional forces and some harvesting and management practices. While these regeneration

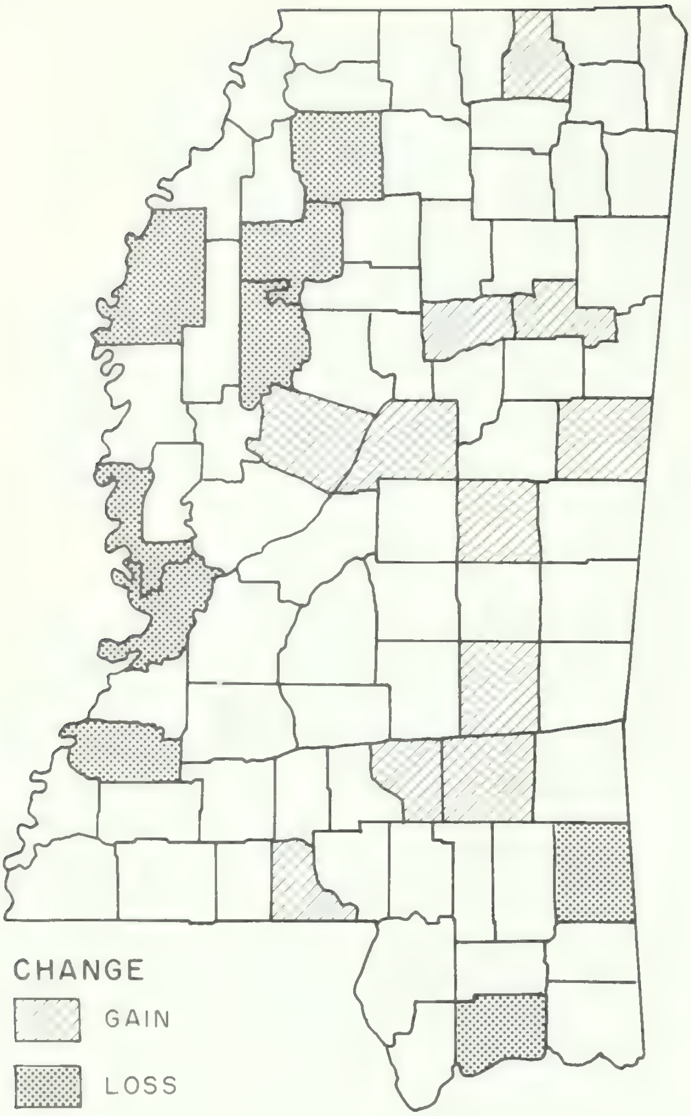

Figure 1.—*Change in timberland area for Mississippi counties; gain or loss of at least 20,000 acres, 1977 to 1987.*

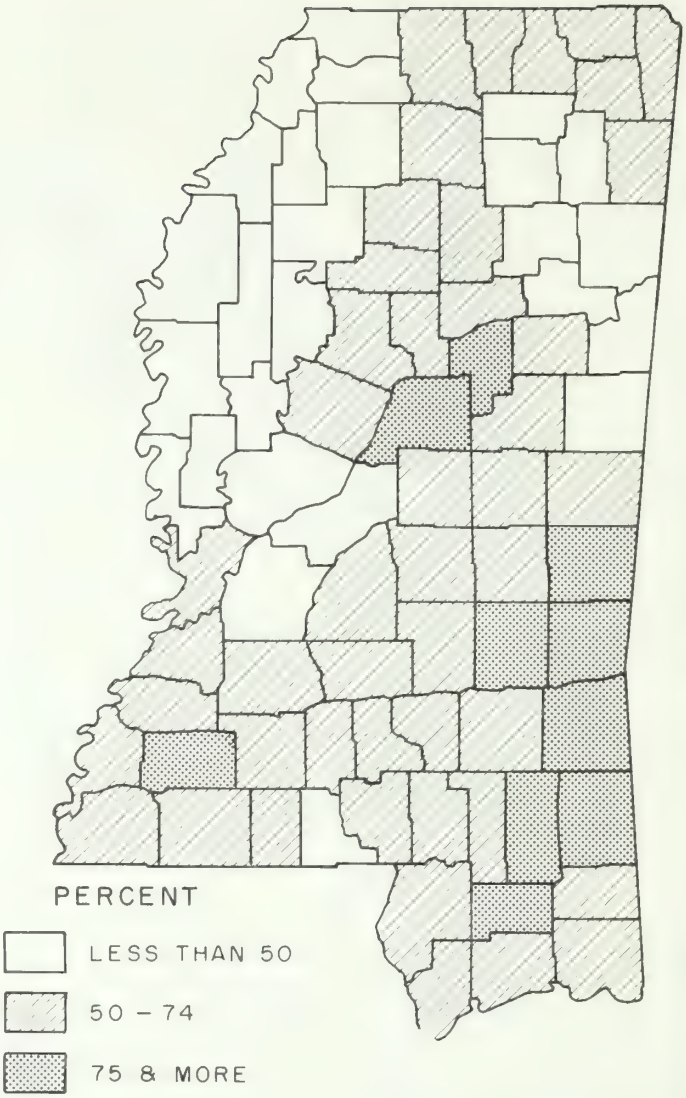

Figure 2.—*Proportion of timberland in Mississippi counties, 1987.*

activities have not precluded the net decline in pine types, they have been a significant factor in pine types currently occupying 28 percent of the total timberland.

Ownership

Mississippi's timberland is dominated by private owners, with only 11 percent publicly owned (table IV, fig. 4). Of the private owners, forest industry holds 3.2 million acres (19 percent), and nonindustrial private owners hold the remaining 70 percent, giving the latter a dominant influence on the character of the forest resource. Nonindustrial private owners are a diverse group having many different land management objectives, as illustrated in one study of a southern State (Holemo and Brown 1975). Forest industry owners, on the other hand, concentrate on timber production to supply raw material to their wood-processing facilities.

Forest industry owners emphasize pine management (table IV). Sixty-two percent of the timberland owned by forest industry is in pine or oak-pine forest types. Only 44 percent of nonindustrial private timberland is in pine or oak-pine types. In contrast, 37 percent of the nonindustrial private timberland is in oak-hickory, but only 23 percent of forest industry land is in this type.

Forest industry has increased its ownership 168,600 acres (6 percent) since 1977. Pine plantations have increased more than any other forest type on industry lands and now represent more than one-

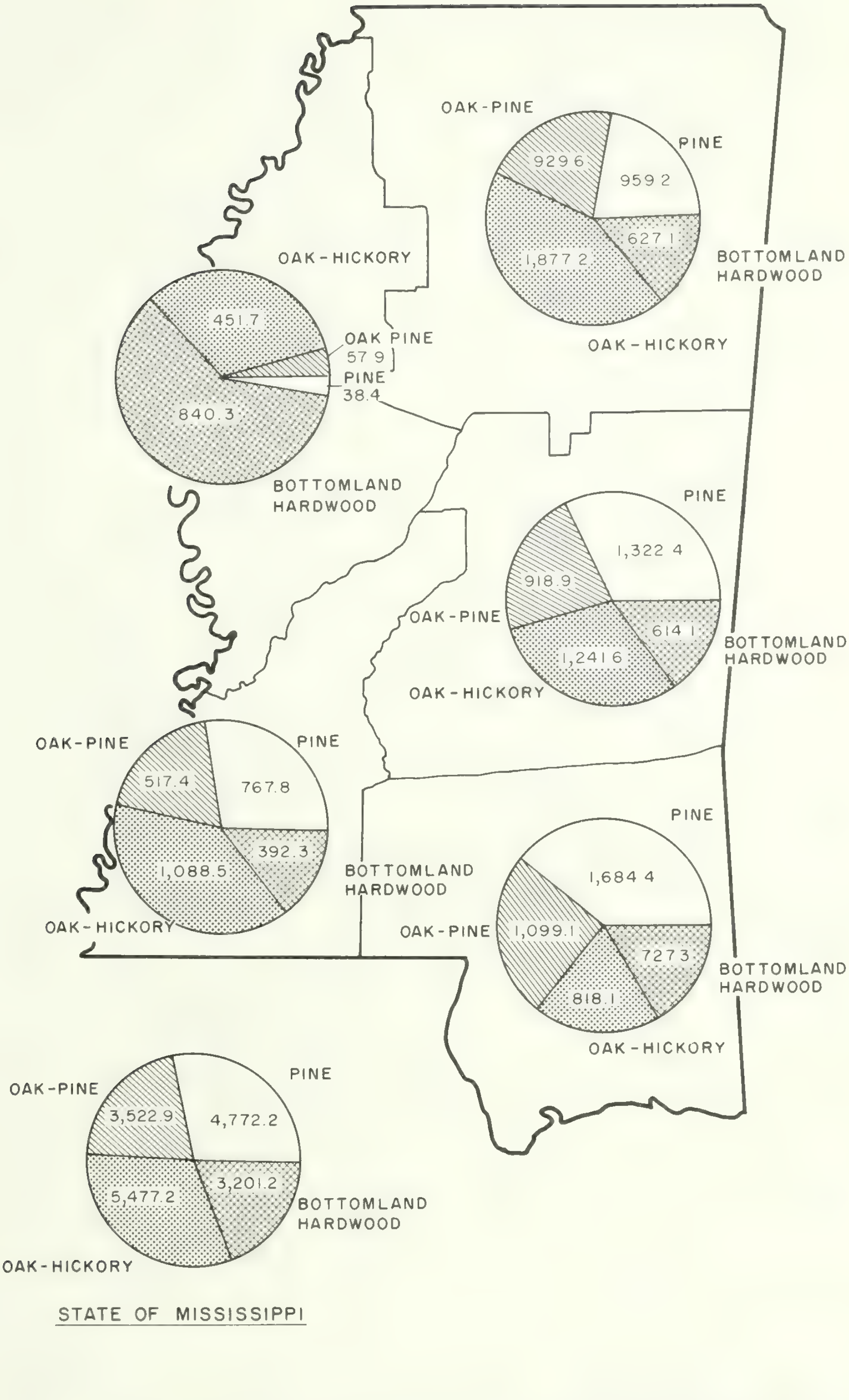

Figure 3.—*Timberland area in thousand acres by forest type and survey region, Mississippi, 1987. Pine type includes longleaf-slash pine and loblolly-shortleaf pine types; bottomland hardwood type includes oak-gum-cypress and elm-ash-cottonwood types.*

Table III.—*Area of timberland and percent change since 1977 by forest type and survey region, Mississippi, 1987*[1]

Survey region	All types	Longleaf-slash pine		Loblolly-shortleaf pine		Oak-pine		Oak-hickory		Oak-gum-cypress		Elm-ash-cottonwood		Nontyped	
		Area	Change	Area	Change	Area	Change	Area	Change	Area	Change	Area	Change	Area	Change
	Thousand acres	*Thousand acres*	*Percent*	*Thousand acres*	*Percent*	*Thousand acres*	*Percent*	*Thousand acres*	*Percent*	*Thousand acres*	*Percent*	*Thousand acres*	*Percent*	*Thousand acres*	*Percent*
Delta	1,388.3	.....	.....	38.4	+121	57.9	-22	451.7	+5	762.3	-10	78.0	-20	......	(2)
North	4,401.3	5.2	(2)	954.0	-14	929.6	+2	1,877.2	+20	593.9	-9	33.2	+131	8.1	(2)
Central	4,097.0	17.1	-51	1,305.3	-10	918.9	+12	1,241.6	+41	614.1	-11	......	......	......	(2)
South	4,328.9	819.2	-19	865.3	+1	1,099.1	+5	818.1	+24	721.8	-4	5.5	(2)	......	(2)
Southwest	2,766.0	.....	(2)	767.8	-3	517.4	-13	1,088.5	+32	359.5	-29	32.8	-8	......	......
All regions	16,981.5	841.5	-20	3,930.7	-7	3,522.9	+2	5,477.2	+26	3,051.7	-12	149.5	+1	8.1	-55

[1] Rows and columns may not add due to rounding.

[2] Change is based on one plot only.

Table IV.—*Timberland area and percent change since 1977, by ownership and forest type, Mississippi, 1987*[1]

Ownership	All types		Pine plantations[2]		Natural pine[3]		Oak-pine		Oak-hickory		Bottomland hardwoods		Nontyped	
	Thousand acres	*Percent change*	*Thousand acres*	*Percent change*	*Thousand acres*	*Percent change*	*Thousand acres*	*Percent change*	*Thousand acres*	*Percent change*	*Thousand acres*	*Percent change*	*Thousand acres*	*Percent change*
Public	1,919.3	+10	84.2	-26	581.6	-16	481.2	+27	387.6	+75	384.7	+16	......	......
Forest industry	3,197.3	+6	818.2	+80	496.9	-33	668.3	+4	730.8	+40	475.0	-28	8.1	(4)
Nonindustrial private[5]	11,865.0	(6)	635.3	+10	2,156.1	-20	2,373.4	-2	4,358.7	+21	2,341.5	-10	......	(4)
All owners	16,981.5	+2	1,537.7	+34	3,234.5	-21	3,522.9	+2	5,447.2	+26	3,201.2	-11	8.1	-55

[1] Rows and columns may not add due to rounding.

[2] Includes longleaf-slash pine and loblolly-shortleaf pine forest types artificially regenerated.

[3] Includes longleaf-slash pine and loblolly-shortleaf pine forest types of natural origin.

[4] Change is based on one plot only.

[5] Includes 135.5 thousand acres of land leased by forest industry.

[6] Less than 1 percent change.

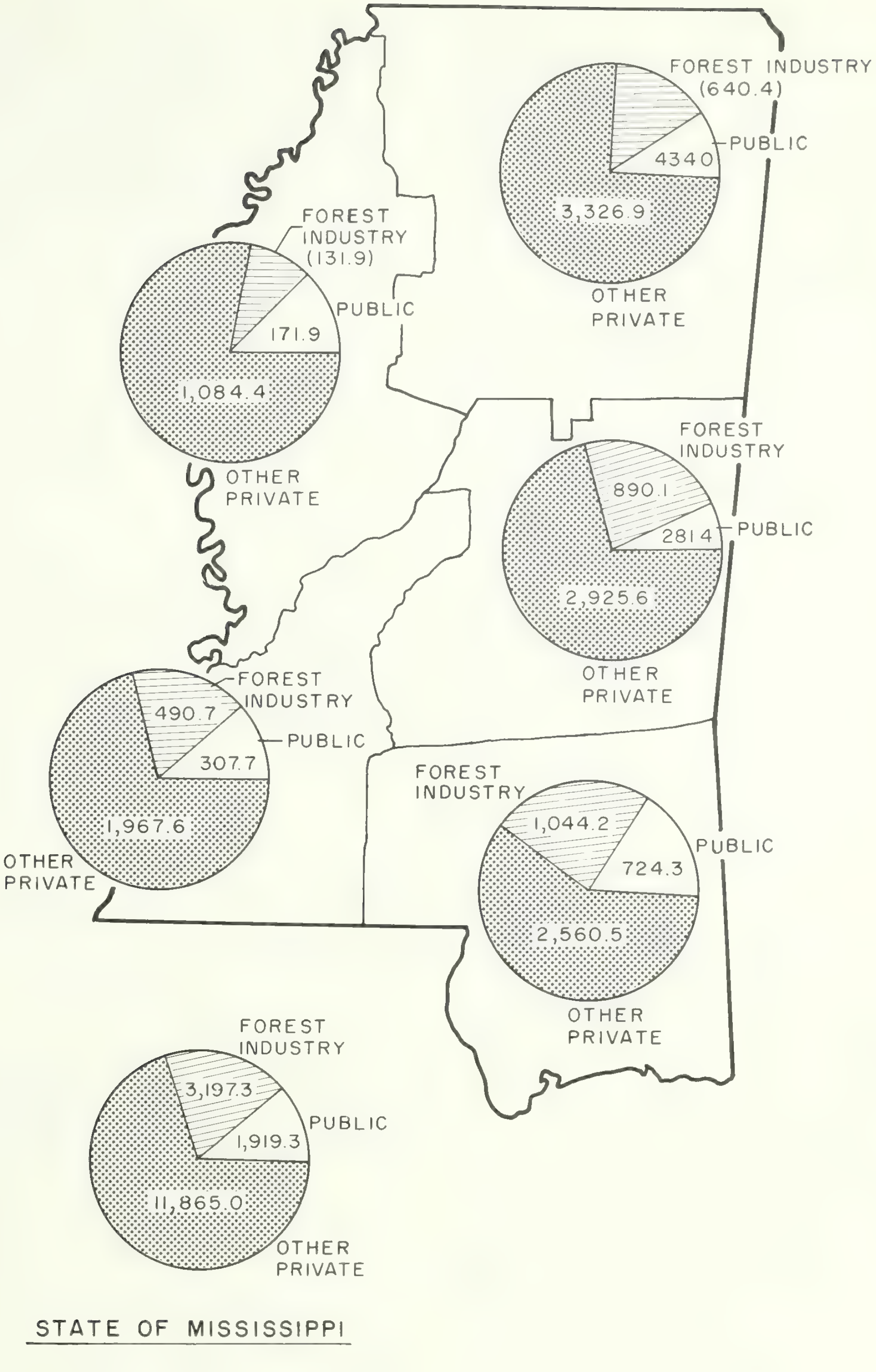

Figure 4.— *Timberland area in thousand acres by ownership and survey region, Mississippi, 1987.*

half the total pine plantations for all ownerships (table IV).

The 21-percent increase in the oak-hickory type was the largest change for nonindustrial private owners and was accompanied by a 20-percent decrease in natural pine acreage. Pine plantations increased a modest 10 percent on nonindustrial private lands.

For public lands, the largest relative change was the 75 percent increase in the oak-hickory type. Natural pine remains the largest forest type on public lands, despite a 16-percent decline since 1977.

Less than 1 percent of the total timberland, 135,500 acres, is under long-term lease by forest industry (table V). This land is in the North, Central, and South regions. For the balance of this analysis, leased lands will be included with nonindustrial private lands.

Plantations

The total area of plantations increased by 927,700 acres, or 50 percent, from 1977 to 1987 (table VI). The acreage occupied by plantations is greatest in the South survey region, as it was in the previous survey. In the South region, almost 1 in 4 acres of timberland is planted; in the North region, 1 in 5 acres is planted. Plantations are common throughout the State, except in the Delta (fig. 5).

Forest industry now owns more acres of plantations, surpassing nonindustrial private owners for the first time; industry also has the largest percentage of its timberland in plantations. Forty-four percent of forest industry timberland is in plantations, a far larger percentage than either public (11 percent), or nonindustrial private (10 percent) ownerships (table VI.).

Most forest plantations in Mississippi were planted to pine, but the actual forest type, based on all live trees in the stand, is either oak-pine or oak-hickory for many. Forest types of plantations on upland sites are as follows: longleaf-slash pine, 334,000 acres; loblolly-shortleaf pine, 1,203,700 acres; oak-pine, 752,600 acres; and oak-hickory, 450,000 acres. Additionally, there are 30,000 acres of bottomland hardwood plantations.

Many of the young (even-aged) plantations classed as oak-pine and oak-hickory forest types will eventually become pine forest types, as pines compete favorably with young hardwoods during early stand development. (The majority of oak-pine and many oak-hickory plantations are less than 15 years old.) For example, over one-half of the planted plots classified as oak-pine and less than 15 years old in

Table V.—*Timberland area, growing-stock volume, and sawtimber volume on privately owned land leased to forest industry, by survey region, Mississippi, 1987*[1]

Survey region	Timberland area	Growing-stock volume			Sawtimber volume		
		All species	Softwood	Hardwood	All species	Softwood	Hardwood
	Thousand acres	*Million cubic feet*			*Million board feet*		
Delta	......	......	......	......	......	......	......
North	28.9	27.3	13.6	13.8	95.8	46.9	48.8
Central	87.6	123.7	52.3	71.4	442.8	213.1	229.7
South	19.1	22.7	17.7	5.0	70.0	65.2	4.8
Southwest	......	......	......	......	......	......	......
All regions	135.5	173.7	83.6	90.1	608.5	325.2	283.3

Rows and oclumns may not add due to rounding.

[1] International 1/4-inch rule.

Table VI.—*Area of forest plantations by survey region and ownership, Mississippi, 1977 and 1987*

Survey region	1987 ownership				1977 ownership			
	All owners	Public	Forest industry	Nonindustrial private[1]	All owners	Public	Forest industry	Nonindustrial private[1]
	Thousand acres							
Delta	37.5	......	18.3	19.2	100.1	.....	19.2	80.9
North	899.0	67.6	389.5	441.9	671.1	88.7	125.6	456.9
Central	582.3	34.5	312.2	235.6	312.4	6.2	190.2	115.9
South	1,037.9	100.1	563.7	374.1	690.7	81.5	390.5	218.6
Southwest	213.7	16.7	112.1	84.8	68.4	7.0	18.0	43.4
All regions	2,770.3	219.0	1,395.7	1,155.7	1,842.6	183.4	743.5	915.7

Rows and columns may not add due to rounding.

[1] Includes 25.9 thousand acres of leased land (all regions).

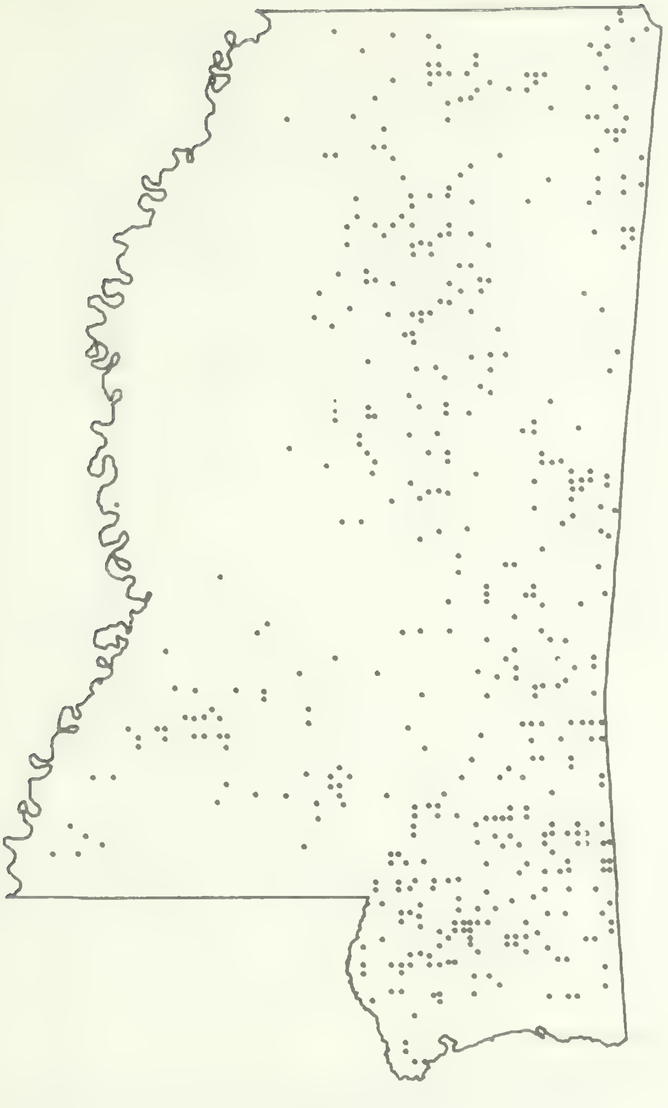

Figure 5.—*Forest plots located on planted areas, Mississippi, 1987.*

1977 are now classed as pine forest type. One-quarter of the planted oak-hickory plots that were less than 15 years of age in 1977 are now classed as pine, and about one-half of the plots moved into the oak-pine type.

Not all artificially regenerated stands are even-aged. This occurs because of stand components that are present at the time of planting or that develop afterward. Survey procedures assign stand ages based on all trees in the stand, rather than on any portion. Thus, where two or more distinct age classes are in a stand, a mixed-age category is assigned. Twenty percent (522,000 acres) of the artificially regenerated stands are uneven-aged.

Stand Size

More timberland is classed as sawtimber than either poletimber or sapling-seedling stands (table VII, fig. 6). The clear trend is toward more acreage in sawtimber-size stands, which comprise 48 percent of the total timberland. Poletimber and sapling-seedling stands each account for about one-fourth of the total. Sawtimber stands have increased 9 percent from 1977 to 1987. Poletimber stands, on the other hand, have decreased 10 percent whereas sapling-seedling stands have remained about the same during the past 10 years.

The increase in sawtimber stands indicates the maturing of stands established over the past several decades. Many are moving from poletimber size into sawtimber size, thus accounting for the decrease of poletimber stands. Regeneration is helping to maintain the area of sapling-seedling stands.

Only forest industry land shows an increase in sapling-seedling stands (table VIII). Forty-one percent of these holdings are in the sapling-seedling class. Sawtimber stands are increasing on the forest land of public and nonindustrial private owners but decreasing on forest industry lands. The trends for forest industry result from the harvesting and regeneration of lands acquired during the late 1960's and the 1970's.

STAND STRUCTURE

Number of Trees

The trends in tree numbers are characteristic of maturing forests: (1) saplings and seedlings are decreasing, (2) larger trees and cull trees are increasing, (3) growing-stock trees, except in the larger size classes, are decreasing, and (4) hardwoods, many of which tolerate competition, are increasing compared with softwoods, which generally do not. The ratio of hardwoods to softwoods for each of the three principal tree sizes (saplings and seedlings, poletimber, and sawtimber) has increased since 1977.

Since 1977, the number of softwood saplings and seedling (trees less than 5 inches in d.b.h.) has declined 17 percent, while hardwoods have declined 12 percent. Live softwood trees 5 to 12.9 inches in d.b.h. have decreased 17 percent, while hardwoods have remained unchanged (figs. 7 and 8). Live softwood trees at least 13 inches in d.b.h. have increased 8 percent and hardwoods 12 percent.

The number of merchantable-size cull trees ($\geq$5-inch d.b.h.) has increased 19 percent for softwoods and 9 percent for hardwoods (fig. 9). Hardwood cull trees outnumber softwoods more than seven to one. Merchantable-size growing-stock trees have decreased — softwoods by 16 percent and hardwoods by only 1 percent (fig. 9).

Table VII.—*Timberland area by stand size class, survey region, and change since 1977, Mississippi, 1987*[1]

		Stand-size class							
	All classes	Sawtimber		Poletimber		Sapling-seedling		Nonstocked[2]	
Survey region	area	Area	Change	Area	Change	Area	Change	Area	Change
	Thousand acres	*Thousand acres*	*Percent*	*Thousand acres*	*Percent*	*Thousand acres*	*Percent*	*Thousand acres*	*Percent*
Delta	1,388.3	968.4	+8	320.7	-13	79.3	-59	19.9	+24
North	4,401.2	1,934.0	+20	1,359.0	-10	1,014.6	-8	93.7	+175
Central	4,097.1	1,891.9	+4	918.0	-15	1,253.1	+29	34.1	+90
South	4,328.9	1,644.7	+6	1,098.9	+4	1,550.9	-5	34.5	-56
Southwest	2,766.0	1,677.8	+8	507.4	-19	561.0	+3	19.9	-29
All regions	16,981.6	8,116.8	+9	4,203.9	-10	4,458.8	( )	202.0	+16

Rows and columns may not add due to rounding.
Less than 16.7 percent stocked with live trees.
Change is less than 1 percent.

Table VIII.—*Area of timberland by stand size, ownership, and change since 1977, Mississippi, 1987*[1]

		Stand-size class							
	All classes	Sawtimber		Poletimber		Sapling-seedling		Nonstocked[2]	
Ownership	area	Area	Change	Area	Change	Area	Change	Area	Change
	Thousand acres	*Thousand acres*	*Percent*	*Thousand acres*	*Percent*	*Thousand acres*	*Percent*	*Thousand acres*	*Percent*
Public	1,919.3	1,260.5	+12	321.1	+31	298.2	-16	39.4	+82
Forest industry	3,197.3	1,104.2	-9	738.6	-1	1,304.5	+26	50.0	+62
Nonindustrial private	11,865.0	5,752.1	+13	3,144.2	-14	2,856.1	-7	112.6	-8
All regions	16,981.5	8,116.8	+9	4,203.9	-10	4,458.8	( )	202.0	+16

Rows and columns may not add due to rounding.
Less than 16.7 percent stocked with live trees.
Change is less than 1 percent.

The decrease in growing-stock trees results from fewer smaller trees. Softwood growing-stock trees at least 13 inches in d.b.h. increased 7 percent, and hardwoods increased 38 percent (fig. 10).

Stocking

Trends in stocking indicate that stands are becoming increasingly occupied, another sign of maturity. The average acre is 109 percent stocked, based on all live trees, up slightly from 105 percent in 1977 (table IX). Stocking is a measure of the relative occupancy of a site; 100 percent represents full stocking. Cull tree stocking increased from 22 percent to 30 percent for the average stand. Average stocking for growing-stock trees, on the other hand, decreased slightly, from 83 percent in 1977 to 79 percent in 1987.

Overstocked stands (130 percent stocking and more for all live trees) increased by 728,200 acres, or 41 percent. Fully stocked stands (60-129 percent stocking) have remained constant; they occupy 83 percent of the timberland. Understocked stands have decreased somewhat and now occupy only 2 percent of the timberland area, down from 3 percent.

Basal Area

Average basal area declined from 82.7 square feet per acre in 1977 to 78.5 in 1987 (table Xa). The reduction occurred because of the change in growing stock (fig. 11), which probably resulted from timber harvesting and mortality. Cull tree basal area, on the other hand, increased an average of 14 percent, from 18.0 square feet per acre in 1977 to 20.6 square feet in 1987. The increase in cull is another indicator of increasing maturity and is a potential treatment opportunity.

The breakdown of average basal area in square feet per acre is as follows: softwood cull, 2.0; softwood growing stock, 24.9; hardwood cull, 18.7; and hardwood growing stock, 33.0 Hardwood growing stock is the largest component on the average statewide and in every survey region except the South, where softwood growing stock is largest (fig. 12).

The apparently divergent trends for average basal area and average stocking are actually the result of stocking calculations and particular resource changes. On the one hand, to represent the dominance of larger trees appropriately, saplings are dis-

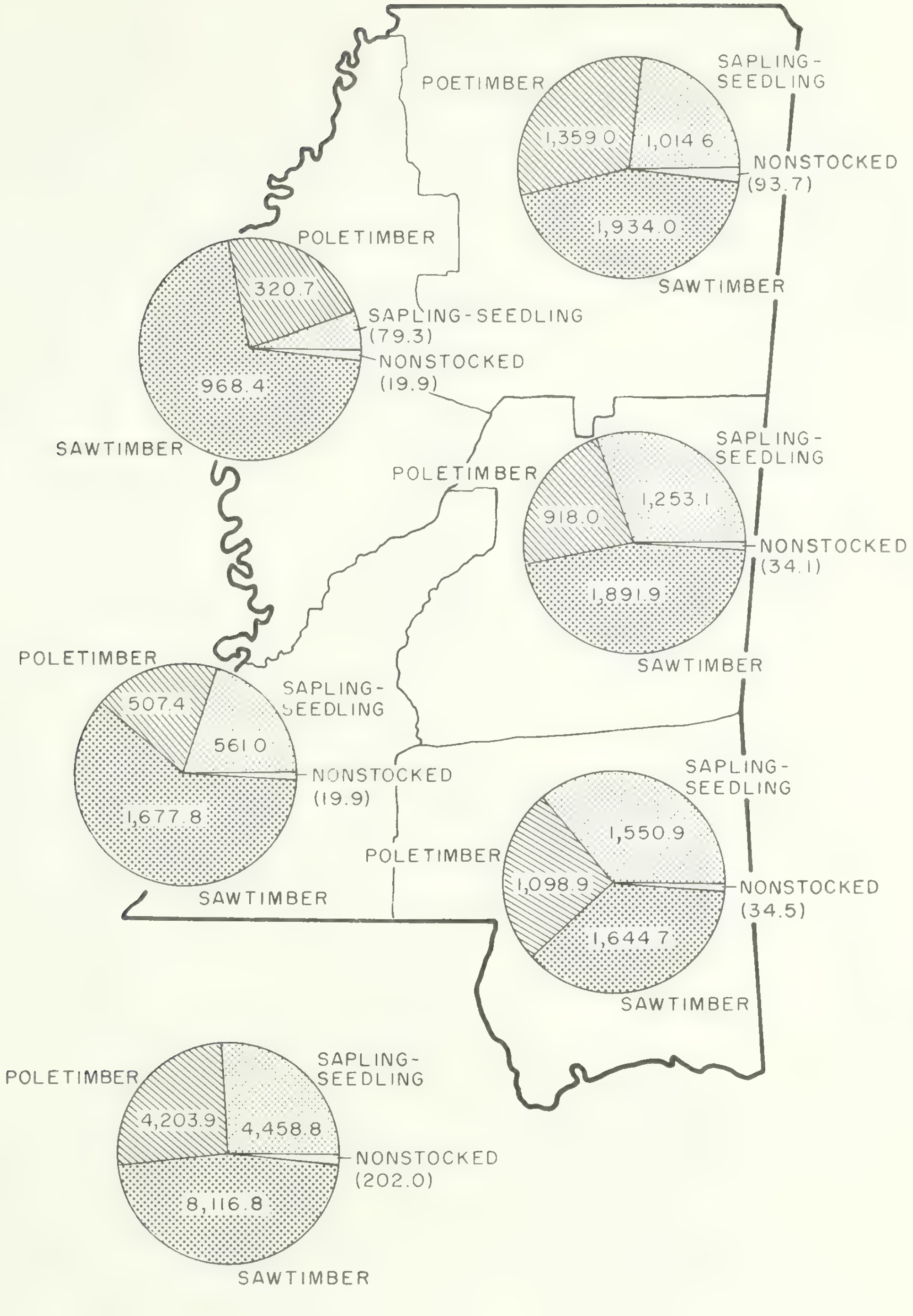

Figure 6.— *Timberland area in thousand acres by stand size and survey region, Mississippi, 1987.*

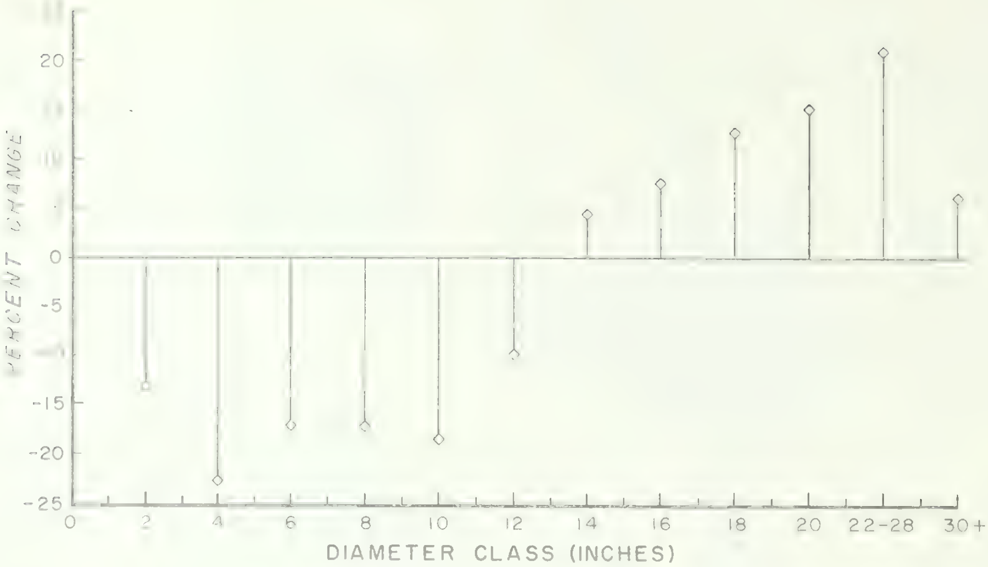

Figure 7.—*Change in number of live softwood trees by diameter class, Mississippi, 1977 to 1987.*

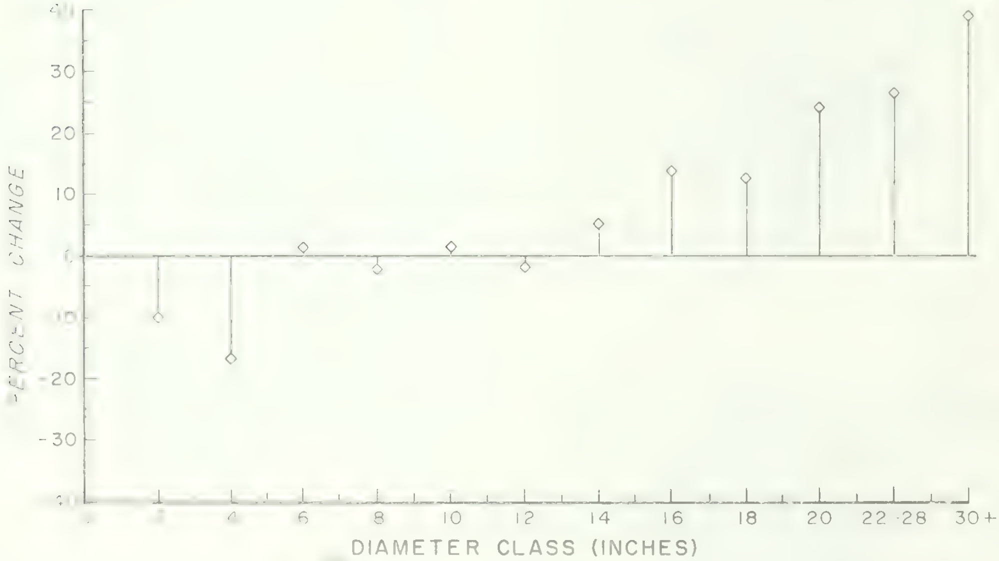

Figure 8.—*Change in number of live hardwood trees by diameter class, Mississippi, 1977 to 1987.*

counted on survey points that have one or more trees 5 inches in d.b.h. or larger. On the other hand, basal area is relatively more concentrated in larger trees than in the previous survey. Thus, even with the small decrease in total basal area, stocking is higher because there is less discounting of small trees for stocking calculations.

The reduction in average basal area is occurring for both softwoods and hardwoods on all forest types, with minor exceptions. Softwood basal area for the longleaf-slash pine forest type increased slightly during the past 10 years, as did hardwood basal area on bottomland hardwood types. Across the State, average basal area decreased in all survey regions except the Delta (tables Xb-Xf), where a 7-percent increase occurred in average hardwood basal area.

Comment On Stand Structure Trends

In the aggregate, Mississippi's forests appear to be maturing. Fewer small trees and more large ones suggest that harvesting and regeneration have failed to keep pace with the aging process. Similarly, increased cull and mortality point toward mature forests. Data on stand age, collected during the survey, is useful primarily in even-aged stands. Other stands are simply classed as mixed and provide little evidence of an aging forest. The other symptoms, however, leave little doubt.

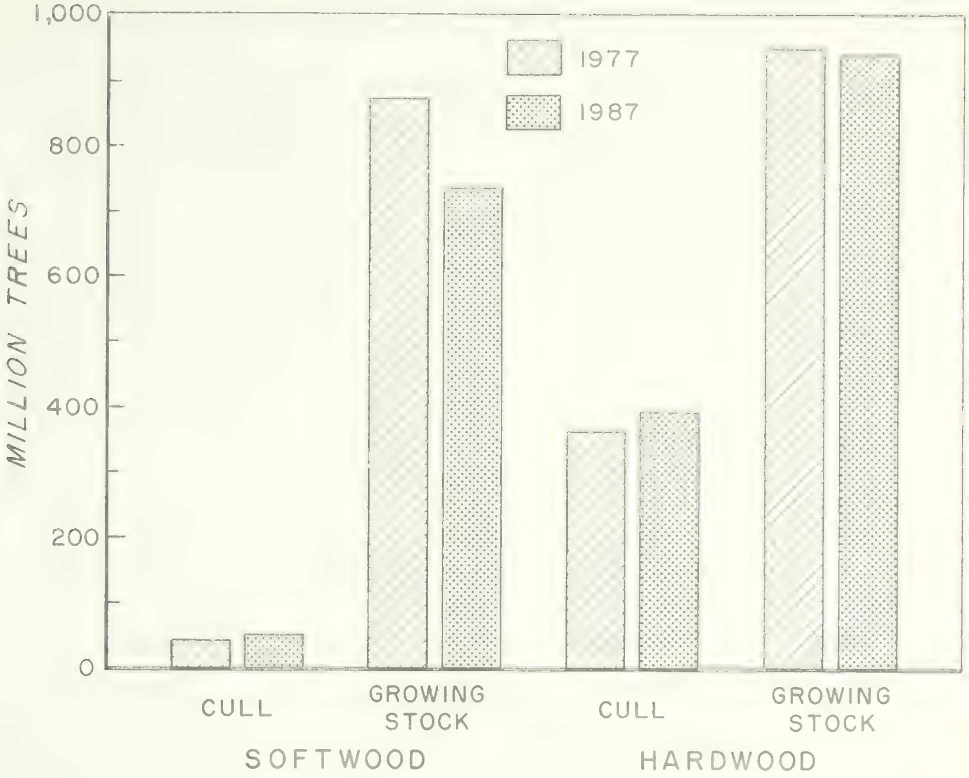

Figure 9.—*Number of merchantable-size (≥ 5.0 inches d.b.h.) cull trees and growing-stock trees by softwood and hardwood groups, Mississippi, 1977 and 1987.*

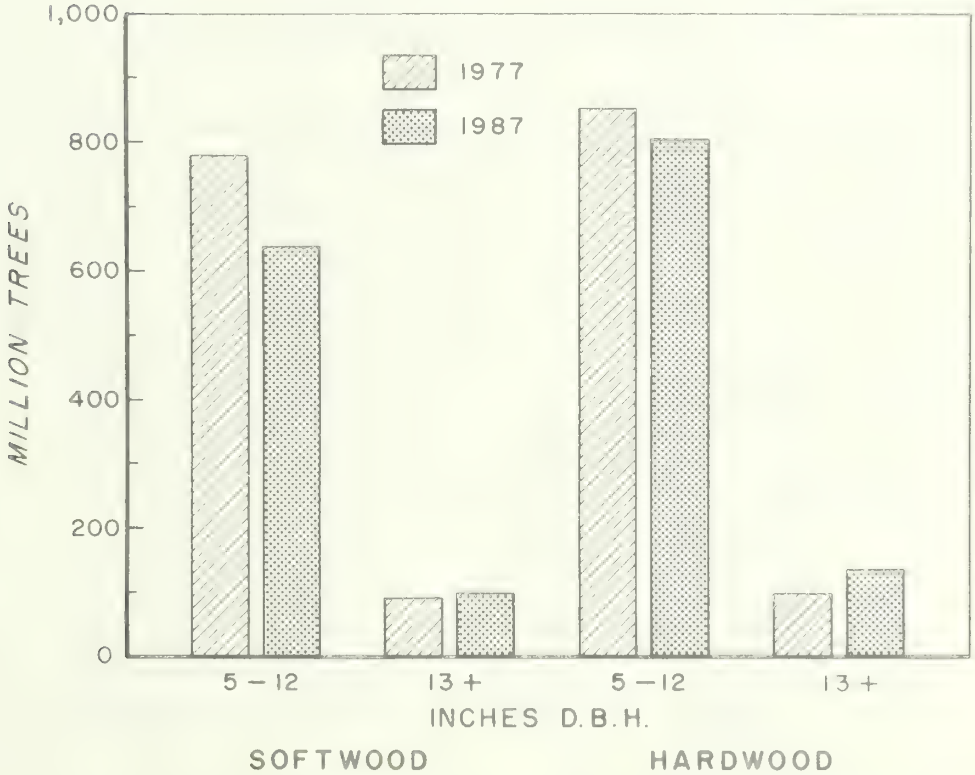

Figure 10.—*Number of small and large growing-stock trees by softwood and hardwood groups, Mississippi, 1977 and 1987.*

Table IX—*Average percent stocking for all live trees on timberland by tree class and survey region, Mississippi, 1977 and 1987*[1]

Survey region	All tree classes 1987	All tree classes 1977	Growing stock 1987	Growing stock 1977	Cull 1987	Cull 1977
	Percent					
Delta	101	98	67	69	34	30
North	111	107	78	84	32	23
Central	112	109	84	90	28	20
South	108	100	79	81	29	19
Southwest	106	105	78	82	29	22
All regions	109	105	79	83	30	22

[1] Totals for all tree classes may not add due to rounding.

TIMBER VOLUME

The volume of live timber in Mississippi forests totals 22.3 billion cubic feet, a 13-percent increase since 1977. Timber volume includes the merchantable sound-wood volume of all live growing-stock trees, rough trees, rotten trees, and noncommercial species. Fifty-eight percent of the volume is in hardwood species; eighty-seven percent of all live timber volume is in growing stock and the remainder is in rough cull trees (10 percent), rotten cull trees (2 percent), and noncommercial species (1 percent).

Softwood live timber volume has increased only 2 percent; hardwood volume has increased 23 percent. Trends for growing-stock volume are similar to those for all live timber, although the small increase in total softwood volume is due mainly to the increase in the cull component. Sawtimber volume has increased for softwoods and hardwoods but not for the best quality trees.

Growing Stock

Total growing-stock volume increased 11 percent between 1977 and 1987, all in hardwood species (table XI). Currently 19.4 billion cubic feet of growing stock are contained in 74 different species; most of the volume is in 12 species variously distributed across the State (fig. 13). Hardwoods account for 10.3 billion cubic feet.

Softwood volume declined in the Central and Southwest regions and increased modestly elsewhere, resulting in a statistically insignificant increase of 73.7 million cubic feet. All d.b.h. classes below 14 inches decreased in volume while 14-inch and larger classes increased (fig. 14). The reduced poletimber and small-sawtimber volume may diminish the availability of pulpwood and some sawtimber. The major changes among softwood species have been a decrease in the volume of shortleaf pine and an increase in loblolly pine (fig. 15).

The 23-percent increase in hardwood growing-stock volume resulted from increases in all d.b.h. classes except the 5- to 6.9-inch class (fig. 16). The increase in hardwood volume over the past 10 years

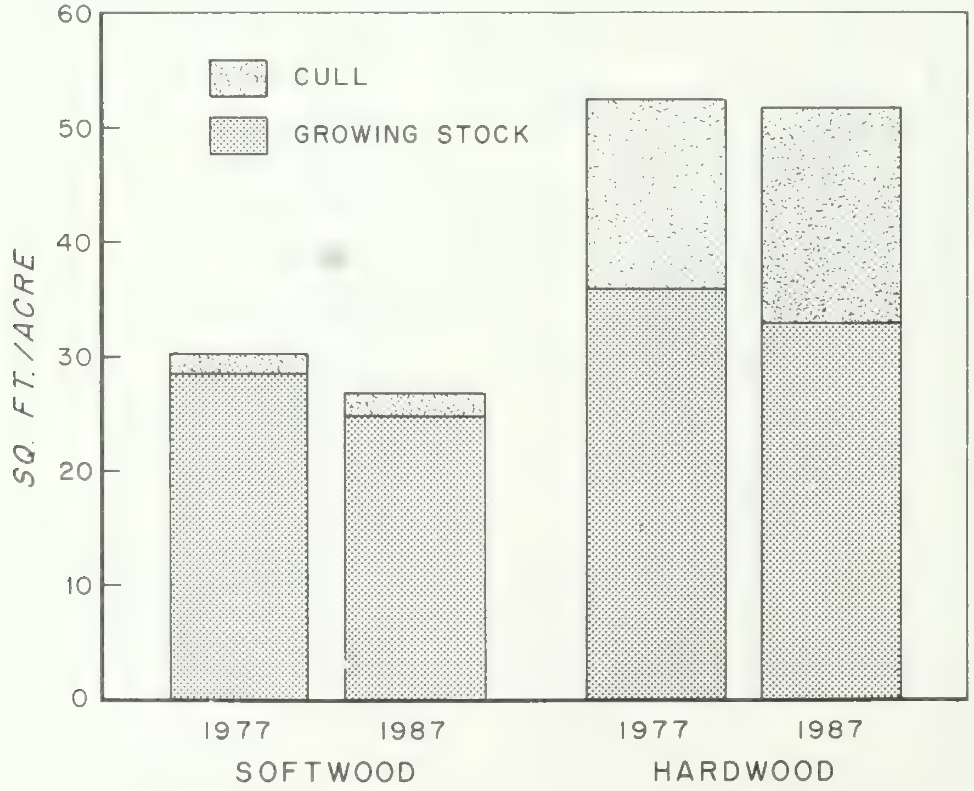

Figure 11.—*Average basal area on timberland by species group and component, Mississippi, 1977 and 1987.*

Table Xa.—*Average basal area per acre of live trees by forest type, and tree class, Mississippi, 1977 and 1987*

Species group and forest type	Tree class 1987			Tree class 1977		
	All trees	Growing stock	Cull	All trees	Growing stock	Cull
	Square feet per acre					
Softwoods:						
Longleaf-slash pine	54.3	51.0	3.3	50.7	48.7	2.1
Loblolly-shortleaf pine	64.0	59.4	4.7	69.7	65.9	3.8
Oak-pine	30.6	28.5	2.2	31.3	29.6	1.7
Oak-hickory	6.7	6.2	0.6	6.9	6.4	0.5
Bottomland hardwoods[1]	4.2	3.7	0.4	5.6	5.0	0.5
All softwoods	26.8	24.9	2.0	30.3	28.6	1.7
Hardwoods:						
Longleaf-slash pine	11.5	5.8	5.6	11.7	7.8	3.9
Loblolly-shortleaf pine	24.5	13.7	10.8	26.1	17.7	8.4
Oak-pine	44.4	27.3	17.1	47.1	32.5	14.6
Oak-hickory	60.8	39.6	21.1	64.9	45.7	19.2
Bottomland hardwoods[1]	88.3	59.1	29.2	85.3	57.6	27.7
All hardwoods	51.7	33.0	18.7	52.4	36.0	16.4
All types	78.5	57.9	20.6	82.7	64.6	18.0

[1] Includes oak-gum-cypress and elm-ash-cottonwood forest types.

continues a trend that has been evident since the third forest survey in 1957. Most major hardwood species increased in volume during the decade (fig. 17). The largest increases were in the other red oaks group and sweetgum.

Trends in growing-stock volume are similar for the major owner categories except for forest industry (table XII). Softwood and hardwood species slightly declined in volume on industry lands; this change for hardwood contrasts with the large increases on other ownerships.

Thus, while total growing-stock volume increased, as it has for 30 years, softwood volume has changed little in the past 10 years. Softwood volume remains at a level not surpassed before 1977, at least since the first forest survey. In 1934 softwood growing-stock volume was approximately 4.6 billion cubic feet[1]. By 1948 softwood inventory had fallen to 3.3 billion cubic feet and remained at that level in 1957. By 1967, softwood growing-stock volume was 6.6 billion cubic feet; in 1977, 9.0 billion; and currently, 9.1 billion (fig. 18).

Growing-stock volume averages 1,144 cubic feet per acre, up 10 percent from 1977. Softwood volume averages 535 cubic feet per acre, and hardwood 609.

Sawtimber

Sawtimber volume has increased since 1977 for softwoods and hardwoods; with minor exceptions the increases have occurred in all survey regions and for all d.b.h. classes (table XIII, figs. 19, 20). Sawtimber inventory for 1987 was 73.2 billion board feet, with 54 percent in softwoods.

Softwood sawtimber volume has increased 11 percent statewide. The increase varies by region, from 2 percent in the Southwest to 50 percent for the Delta. The Delta, however, supports only 1 percent of the total softwood sawtimber volume. Volume in the North region increased 27 percent. For 2-inch d.b.h. classes, only the smallest class, 9.0 to 10.9 inches, decreased. Most softwood sawtimber continues to occur in natural pine types, despite a 4-percent decrease in these stands (table XIV).

Hardwood sawtimber volume increased 31 percent. The increase was across all survey regions, all d.b.h. classes, and all forest types.

Increases in sawtimber volume occurred on all ownerships, except for forest industry, where small decreases have occurred over the past 10 years.

Tree Grade Trends

Table XV indicates recent trends by tree grade. In the forest survey, tree grade is determined by the grade of the butt log. Grade 1 sawtimber volume has

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[1] Because survey standards have changed over the years, it is impossible to provide a completely compatible estimate of inventory volume for the first survey; this estimate is based on available data appropriately converted.

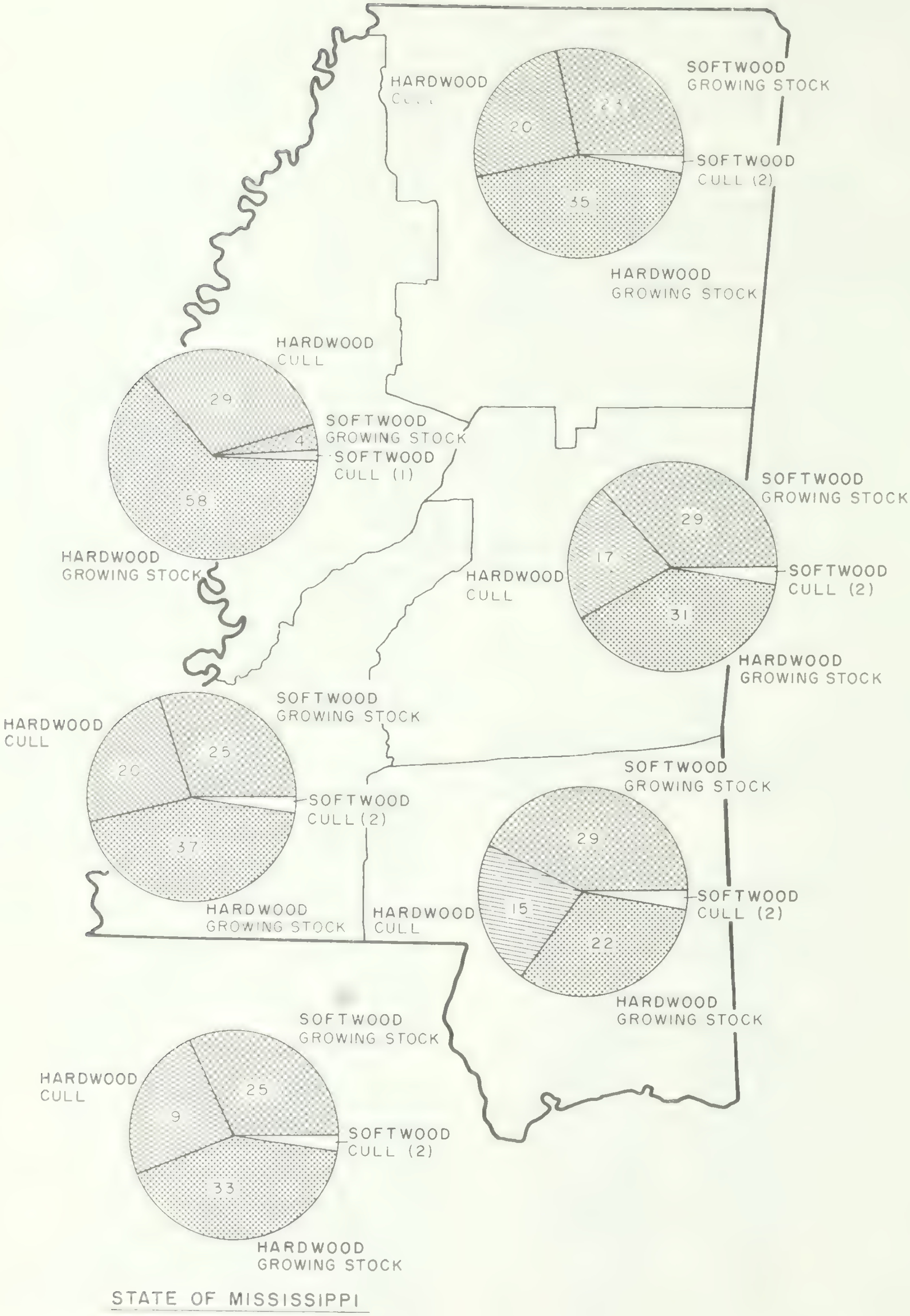

Figure 12.—*Average basal area in square feet per acre on timberland by component and survey region, Mississippi, 1987.*

Table Xb.—*Average basal area per acre of live trees by forest type, and tree class, Delta region, 1977 and 1987*

Species group and forest type	Tree class 1987			Tree class 1977		
	All trees	Growing stock	Cull	All trees	Growing stock	Cull
	Square feet per acre					
Softwoods:						
Longleaf-slash pine	......	......	......	......	......	......
Loblolly-shortleaf pine	38.4	36.1	2.2	78.8	77.6	1.2
Oak-pine	31.8	30.6	1.3	29.8	27.9	1.9
Oak-hickory	2.5	2.0	0.5	2.8	2.4	0.4
Bottomland hardwoods[1]	3.0	2.3	0.8	2.9	2.3	0.6
All softwoods	5.1	4.3	0.8	5.1	4.5	0.6
Hardwoods:						
Longleaf-slash pine	......	......	......	......	......	......
Loblolly-shortleaf pine	26.9	13.9	13.0	30.7	24.4	6.3
Oak-pine	52.9	31.5	21.4	50.3	36.7	13.6
Oak-hickory	83.6	54.9	28.7	76.3	50.7	25.6
Bottomland hardwoods[1]	95.1	64.0	31.1	88.8	61.5	27.2
All hardwoods	87.7	58.3	29.4	82.1	56.4	25.7
All types	92.7	62.6	30.2	87.2	60.9	26.3

[1] Includes oak-gum-cypress and elm-ash-cottonwood forest types.

Table Xc.—*Average basal area per acre of live trees by forest type, and tree class, North region, 1977 and 1987*

Species group and forest type	Tree class 1987			Tree class 1977		
	All trees	Growing stock	Cull	All trees	Growing stock	Cull
	Square feet per acre					
Softwoods:						
Longleaf-slash pine	84.9	80.6	4.3	45.8	42.0	3.8
Loblolly-shortleaf pine	72.0	66.2	5.7	72.2	67.7	4.5
Oak-pine	28.9	26.7	2.2	32.4	31.1	1.2
Oak-hickory	6.2	5.6	0.6	6.8	6.2	0.5
Bottomland hardwoods[1]	3.0	2.6	0.4	3.4	3.0	0.4
All softwoods	24.9	22.9	2.0	28.8	27.1	1.7
Hardwoods:						
Longleaf-slash pine	......	......	......	......	......	......
Loblolly-shortleaf pine	28.3	14.8	13.5	27.2	17.6	9.6
Oak-pine	45.0	26.8	18.2	54.0	38.0	16.0
Oak-hickory	65.9	43.8	22.1	72.0	51.3	20.7
Bottomland hardwoods[1]	80.3	54.4	25.9	80.1	55.1	25.0
All hardwoods	55.2	35.3	19.9	57.7	40.2	17.5
All types	80.0	58.2	21.9	86.5	67.3	19.2

[1] Includes oak-gum-cypress and elm-ash-cottonwood forest types.

Table Xd.—*Average basal area per acre of live trees by forest type, and tree class, Central region, 1977 and 1987*

Species group and forest type	Tree class 1987			Tree class 1977		
	All trees	Growing stock	Cull	All trees	Growing stock	Cull
	Square feet per acre					
Softwoods:						
Longleaf-slash pine	78.4	78.4	......	69.0	68.3	0.7
Loblolly-shortleaf pine	66.2	61.6	4.6	72.3	68.5	3.8
Oak-pine	32.6	30.2	2.4	33.9	31.7	2.1
Oak-hickory	7.5	6.9	0.6	9.0	8.5	0.5
Bottomland hardwoods[1]	3.8	3.6	0.2	5.6	5.3	0.3
All softwoods	31.6	29.3	2.2	37.8	35.7	2.1
Hardwoods:						
Longleaf-slash pine	18.4	15.7	2.7	17.2	15.2	2.0
Loblolly-shortleaf pine	24.7	14.5	10.2	26.9	18.9	8.0
Oak-pine	48.0	30.3	17.6	52.2	36.6	15.6
Oak-hickory	52.7	34.6	18.1	58.1	41.5	16.5
Bottomland hardwoods[1]	83.5	57.3	26.2	83.4	58.1	25.4
All hardwoods	47.2	30.6	16.6	49.3	34.7	14.6
All types	78.8	59.9	18.9	87.1	70.4	16.6

[1] Includes oak-gum-cypress and elm-ash-cottonwood forest types.

Table Xe.—*Average basal area per acre of live trees by forest type, and tree class, South region, 1977 and 1987*

Species group and forest type	Tree class 1987			Tree class 1977		
	All trees	Growing stock	Cull	All trees	Growing stock	Cull
	Square feet per acre					
Softwoods:						
Longleaf-slash pine	53.6	50.3	3.3	50.0	47.9	2.1
Loblolly-shortleaf pine	54.8	50.3	4.5	58.9	55.6	3.2
Oak-pine	29.0	26.9	2.1	26.6	25.3	1.3
Oak-hickory	8.6	8.2	0.4	8.2	7.4	0.7
Bottomland hardwoods[1]	7.1	6.7	0.4	9.3	8.8	0.5
All softwoods	31.3	29.1	2.2	32.6	30.9	1.6
Hardwoods:						
Longleaf-slash pine	11.4	5.7	5.7	11.5	7.5	4.0
Loblolly-shortleaf pine	18.9	9.8	9.2	21.5	13.5	8.0
Oak-pine	35.9	20.6	15.3	34.6	21.3	13.3
Oak-hickory	38.6	22.8	15.8	45.5	33.1	12.4
Bottomland hardwoods[1]	91.0	57.9	33.1	85.4	55.0	30.4
All hardwoods	37.6	22.3	15.3	37.1	24.2	12.9
All types	68.9	51.4	17.5	69.6	55.1	14.5

[1] Includes oak-gum-cypress and elm-ash-cottonwood forest types.

Table Xf.— *Average basal area per acre of live trees by forest type, and tree class, Southwest region, 1977 and 1987*

Species group and forest type	Tree class 1987 All trees	Tree class 1987 Growing stock	Tree class 1987 Cull	Tree class 1977 All trees	Tree class 1977 Growing stock	Tree class 1977 Cull
	Square feet per acre					
Softwoods:						
Longleaf-slash pine	......	......	......	71.9	67.5	4.4
Loblolly-shortleaf pine	62.2	58.5	3.7	73.0	69.7	3.2
Oak-pine	33.6	31.7	1.9	34.3	31.9	2.4
Oak-hickory	7.0	6.5	0.5	6.0	5.6	0.4
Bottomland hardwoods[1]	3.4	3.2	0.2	7.7	6.8	0.9
All softwoods	26.8	25.2	1.6	31.8	30.0	1.8
Hardwoods:						
Longleaf-slash pine	......	......	......	17.3	13.5	3.8
Loblolly-shortleaf pine	25.4	15.3	10.2	27.7	20.0	7.7
Oak-pine	54.3	36.4	17.9	51.3	37.7	13.6
Oak-hickory	68.4	44.6	23.8	68.3	47.1	21.2
Bottomland hardwoods[1]	89.0	60.9	28.1	88.0	56.9	31.1
All hardwoods	56.7	37.2	19.5	56.8	39.2	17.6
All types	83.5	62.4	21.1	88.5	69.2	19.3

[1] Includes oak-gum-cypress and elm-ash-cottonwood forest types.

Table XI.—*Growing-stock volume by survey region, species group, and change since 1977, Mississippi, 1987*[1]

Survey region	All species Volume	All species Change	Softwood Volume	Softwood Change	Hardwood Volume	Hardwood Change
	Million cubic feet	*Percent*	*Million cubic feet*	*Percent*	*Million cubic feet*	*Percent*
Delta	1,916.3	+23	132.8	+24	1,783.6	+23
North	4,674.7	+16	1,955.7	+9	2,718.9	+21
Central	4,984.6	+7	2,782.6	-2	2,202.0	+20
South	4,042.8	+11	2,442.7	+2	1,600.2	+26
Southwest	3,807.1	+8	1,773.0	-7	2,034.0	+25
All regions	19,425.5	+11	9,086.8	([2])	10,338.7	+23

[1] Rows and columns may not add due to rounding.

[2] Change is less than 1 percent.

decreased since 1977 for both softwoods and hardwoods. Due mainly to the grading specifications regarding tree size for hardwoods, there is no volume in tree grade 1 for trees less than 15 inches in d.b.h. Hardwood grade 1 sawtimber volume has decreased 24 percent for larger trees. Softwood sawtimber volume has decreased 8 percent for all grade 1 trees. Sawtimber volume for small trees (<15 inches in d.b.h.) also decreased for grade 2 (16 percent). Large-tree volume for grade 2, all grade 3 trees, and tie and timber volumes have increased over the past 10 years. Statewide distribution of sawtimber volume for tree grade 1 varies considerably for some species (fig. 21).

These trends are to be expected of maturing timber stands: more volume is in large trees, but quality is deteriorating as defect caused by rot and other degrade sets in. The harvesting of high-quality sawtimber and the inattention given to replacing harvested trees has also contributed to overall lowering of grades.

Saw-log Lengths and Saw-log Top Inside-bark Diameters

For saw logs, the minimum diameter outside bark is 7 inches for softwoods and 9 inches for hardwoods. Often, the small end diameter is larger if the main bole terminates because of branching or defect. Inside bark diameter at the saw-log top is calculated as a linear function of d.b.h., bark thickness at d.b.h., and saw-log top outside bark diameter measured by a Wheeler pentaprism. The butt end of saw-log length is generally a stump 1-foot high, but sometimes higher if the tree is swellbutted or defective in some other way.

Softwood saw logs in trees less than 15 inches in d.b.h. average 38 feet in length to an average top inside-bark diameter of 6.8 inches; larger softwoods average 54 feet and 9.4 inches (table XVI). The average measurements for all softwood sawtimber trees are 41 feet for saw-log length and 7.3 inches for saw-log top inside-bark diameter.

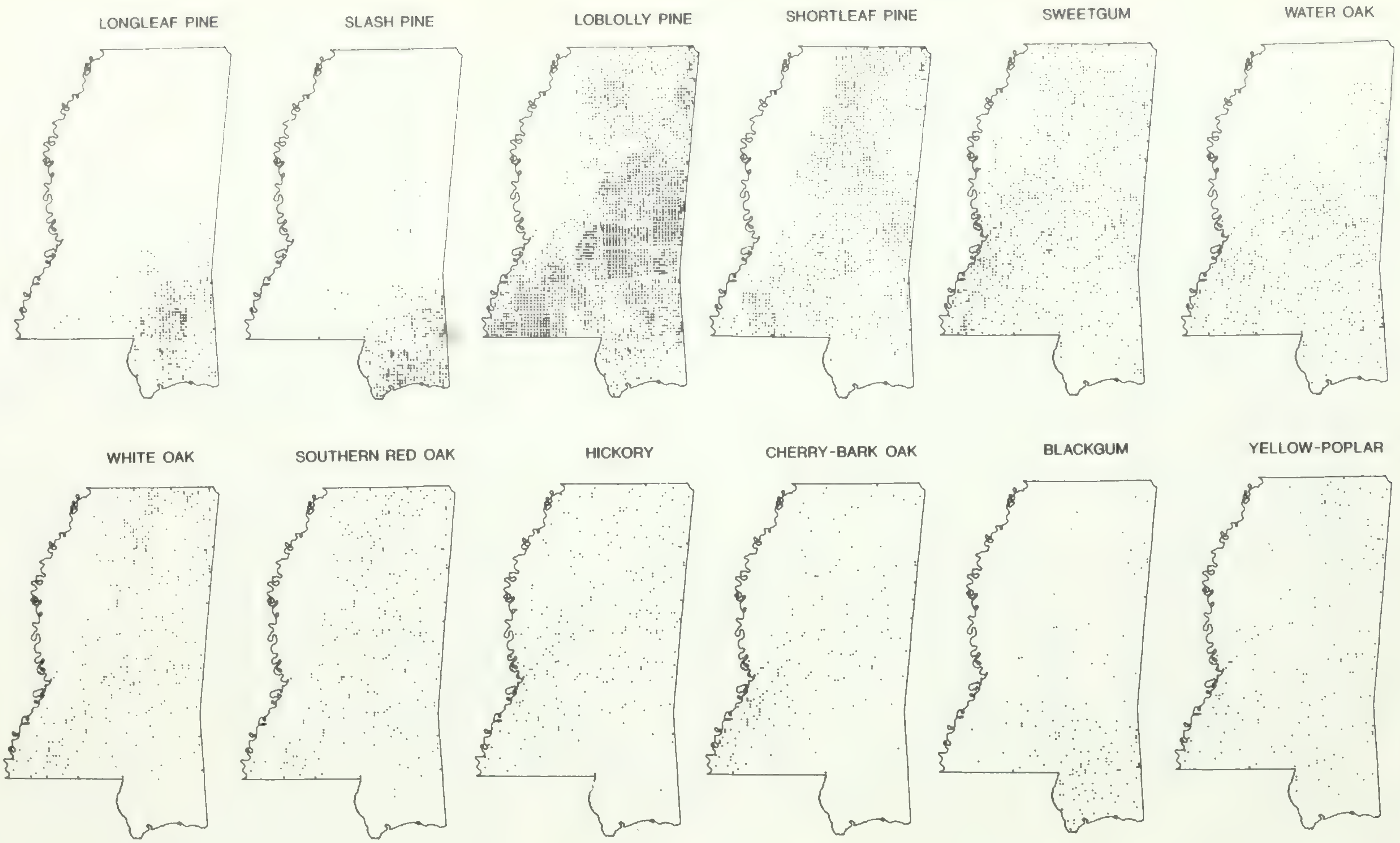

Figure 13.—*Distribution of growing-stock volume, Mississippi, 1987. Each dot represents 2.5 million cubic feet.*

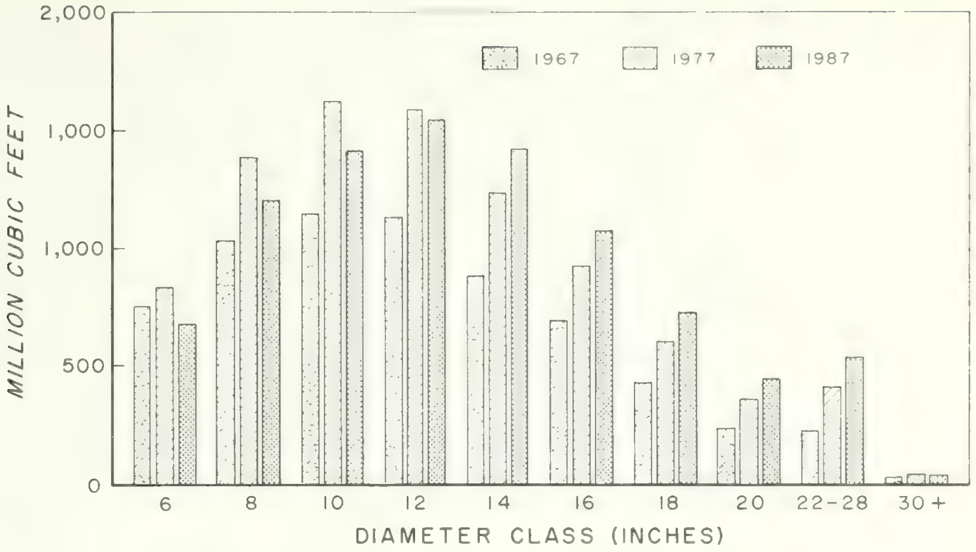

Figure 14.— *Softwood growing-stock volume by diameter class, Mississippi, 1967 to 1987.*

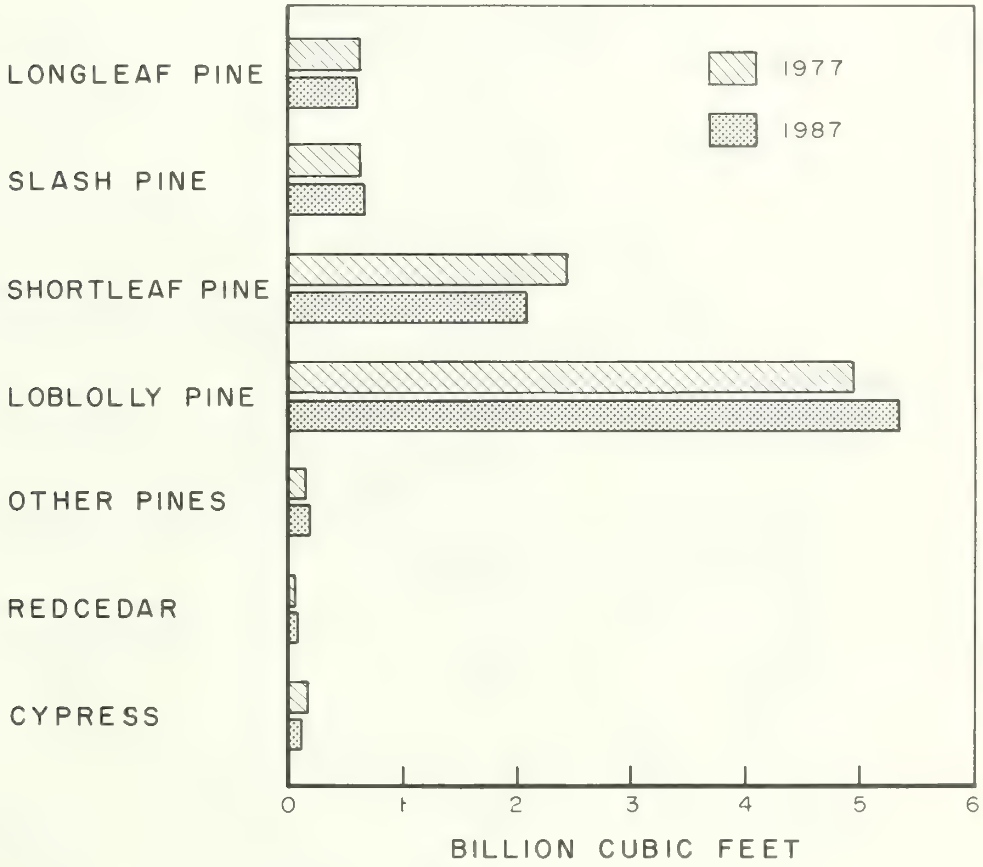

Figure 15.— *Growing-stock volume for softwood species, Mississippi, 1977 and 1987.*

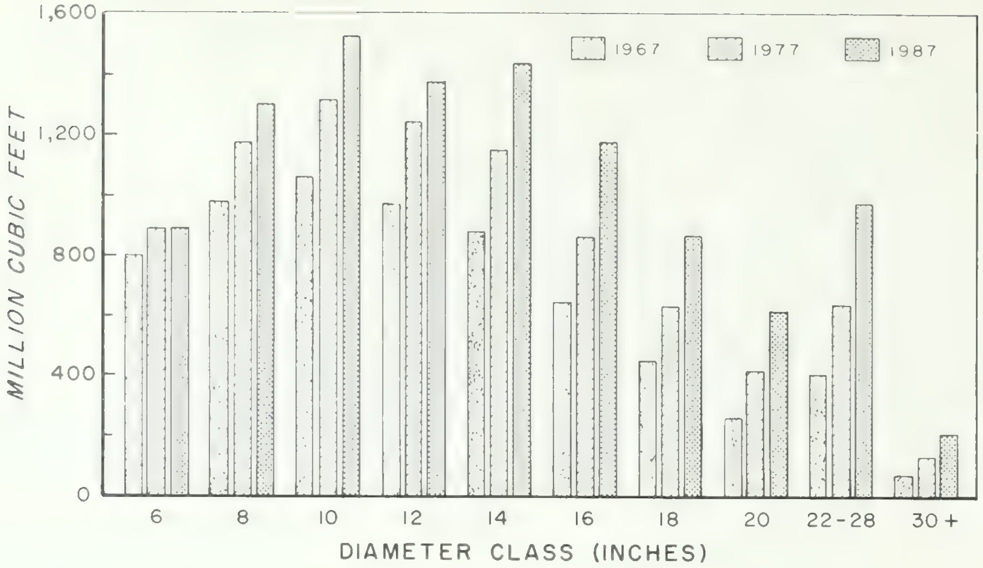

Figure 16.—*Hardwood growing-stock volume by diameter class, Mississippi, 1967 to 1987.*

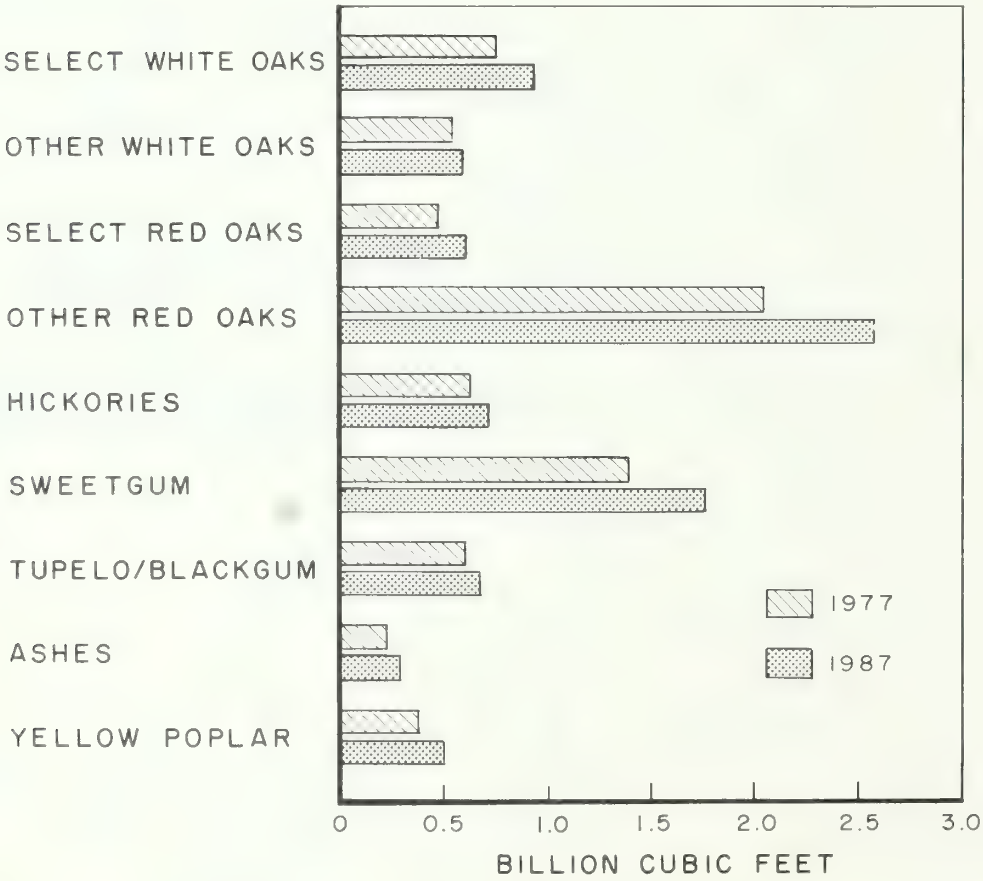

Figure 17.—*Growing-stock volume for major hardwood species, Mississippi, 1977 and 1987.*

Table XII.—*Growing-stock volume by ownership, forest type, species group, and change since 1977, Missippi, 1987*[1]

Ownership	Species group	All types		Pine plantations[2]		Natural pine[3]		Oak–pine		Oak-hickory		Bottomland hardwoods[4]	
		Volume	Change	Volume	Change	Volume	Change	Volume	Change	Volume	Change	Volume	Change
		Million cubic feet	*Percent*	*Million cubic feet*	*Percent*	*Million cubic feet*	*Percent*	*Million cubic feet*	*Percent*	*Million cubic feet*	*Percent*	*Million cubic feet*	*Percent*
Public	Softwood	1,744.7	+7	121.5	+41	1,022.4	-14	463.3	+69	95.7	+70	41.7	+51
	Hardwood	1,319.6	+47	9.4	+54	154.1	+3	274.6	+54	370.6	+112	511.0	+31
	Total	3,064.4	+21	130.9	+42	1,176.5	-12	737.9	+63	466.3	+102	552.7	+32
Forest industry	Softwood	1,671.2	-4	495.4	+65	717.5	-20	310.6	-16	97.5	+61	50.2	-58
	Hardwood	1,281.1	-1	34.4	+98	76.8	-9	183.1	-11	389.7	+33	597.2	-15
	Total	2,952.3	-3	529.8	+67	794.2	-19	493.7	-15	487.2	+38	647.4	-21
Nonindustrial private	Softwood	5,670.9	([5])	530.3	+8	2,834.0	-10	1,506.1	+14	583.8	+42	216.7	-17
	Hardwood	7,738.0	+25	46.5	+10	416.6	+11	1,049.6	+13	3,296.7	+41	2,928.7	+16
	Total	13,408.9	+13	576.8	+8	3,250.6	-8	2,555.6	+14	3,880.5	+41	3,145.4	+13
All owners	Softwood	9,086.8	([5])	1,147.2	+31	4,573.9	-13	2,280.0	+16	777.0	+47	308.6	-25
	Hardwood	10,338.7	+23	90.3	+38	647.4	+6	1,507.2	+14	4,056.9	+45	4,036.8	+12
	Total	19,425.5	+11	1,237.6	+31	5,221.3	-11	3,787.3	+15	4,833.9	+45	4,345.4	+8

[1] Rows and columns may not add due to rounding.
[2] Planted stands of either longleaf-slash pine or loblolly-shortleaf pine forest types.
[3] Longleaf-slash pine and loblolly-shortleaf pine forest types of natural origin.
[4] Oak-gum-cypress and elm-ash-cottonwood forest types.
[5] Change is less than 1 percent.

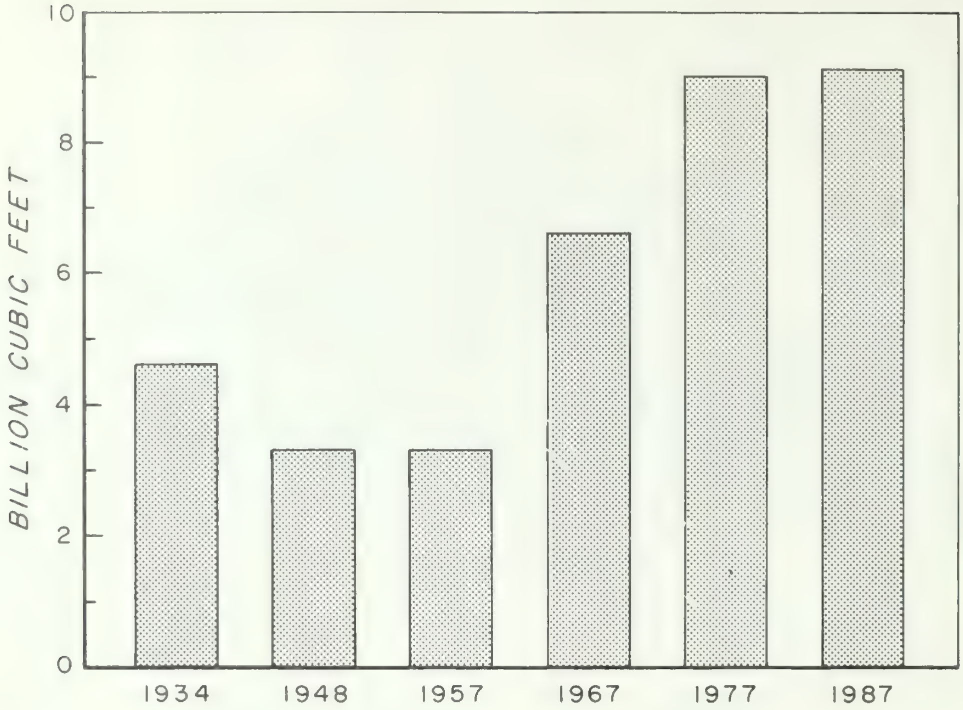

Figure 18.— *Volume of softwood growing stock by survey year, Mississippi.*

Table XIII.— *Sawtimber volume by survey region, species group, and change since 1977, Mississippi, 1987*

Survey	All species Volume	All species Change	Softwood Volume	Softwood Change	Hardwood Volume	Hardwood Change
	Million board feet	*Percent*	*Million board feet*	*Percent*	*Million board feet*	*Percent*
Delta	7,501.4	+28	526.4	+50	6,975.0	+26
North	15,833.1	+32	7,474.9	+27	8,358.2	+36
Central	19,501.7	+17	12,953.5	+12	6,548.2	+29
South	14,177.0	+12	9,679.0	+6	4,498.1	+27
Southwest	16,196.7	+14	8,963.4	+2	7,233.4	+35
All regions	73,209.9	+19	39,597.1	+11	33,612.8	+31

Rows and columns may not add due to rounding.
International 1/4-inch rule.

Table XIV.—*Sawtimber volume by ownership, forest type, species group, and change since 1977, Missippi, 1987*[1]

Ownership	Species group	All types		Pine plantations[2]		Natural pine[3]		Oak–pine		Oak-hickory		Bottomland hardwoods[4]	
		Volume	Change	Volume	Change	Volume	Change	Volume	Change	Volume	Change	Volume	Change
		Million board feet[5]	*Percent*	*Million board feet*[5]	*Percent*	*Million board feet*[5]	*Percent*	*Million board feet*[5]	*Percent*	*Million board feet*[5]	*Percent*	*Million board feet*[5]	*Percent*
Public	Softwood	9,029.9	+11	550.6	+96	5,305.0	-12	2,428.4	+77	537.6	+84	208.3	+36
	Hardwood	4,686.3	+53	14.8	+138	376.5	+9	817.0	+72	1,427.9	+126	2,050.1	+28
	Total	13,716.3	+23	565.3	+97	5,681.5	-11	3,245.4	+75	1,965.5	+113	2,258.5	+29
Forest industry	Softwood	6,379.6	-2	1,222.3	+97	2,997.3	-13	1,427.6	-12	463.8	+83	268.7	-55
	Hardwood	4,197.0	-4	54.4	+82	143.0	-22	516.1	([6])	1,265.3	+36	2,218.1	-18
	Total	10,576.5	-3	1,276.6	+96	3,140.3	-13	1,943.7	-9	1,729.1	+46	2,486.8	-25
Nonindustrial private	Softwood	24,187.6	+14	1,638.3	+45	12,408.7	+3	6,495.1	+27	2,541.8	+59	1,103.7	-14
	Hardwood	24,729.5	+36	141.5	+36	872.0	+19	2,671.8	+12	10,502.5	+55	10,541.7	+29
	Total	48,917.1	+24	1,779.8	+44	13,280.7	+4	9,166.9	+22	13,044.4	+55	11,645.4	+23
All owners	Softwood	39,597.2	+11	3,411.1	+68	20,710.9	-4	10,351.1	+28	3,543.2	+65	1,580.8	-22
	Hardwood	33,612.8	+31	210.6	+51	1,391.6	+10	4,004.9	+18	13,195.8	+58	14,809.9	+19
	Total	73,209.9	+19	3,621.7	+67	22,102.5	-3	14,356.0	+25	16,739.0	+59	16,390.7	+13

[1] Rows and columns may not add due to rounding.
[2] Planted stands of longleaf-slash and loblolly-shortleaf pine forest types.
[3] Longleaf-slash and loblolly-shortleaf pine forest types of natural origin.
[4] Oak-gum-cypress and elm-ash-cottonwood forest types.
[5] International 1/4-inch rule
[6] Change of less than 1 percent.

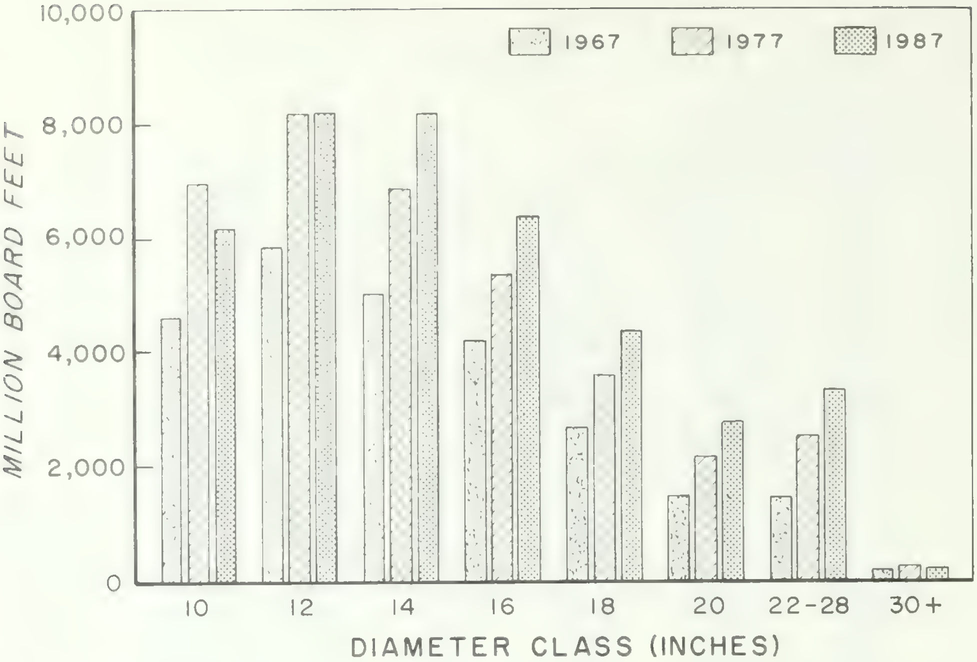

Figure 19.—*Softwood sawtimber volume by diameter class, Mississippi, 1967 to 1987.*

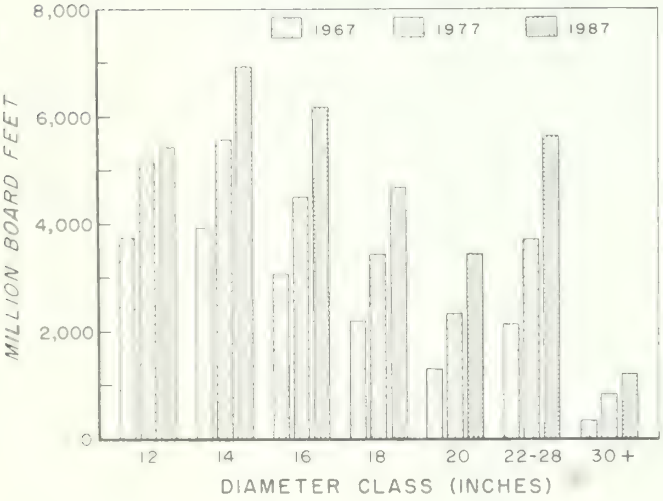

Figure 20.—*Hardwood sawtimber volume by diameter class, Mississippi, 1967 to 1987.*

Similar measurements for small hardwoods are 26 feet for saw-log length and 9.0 inches for small end diameter inside bark; large hardwoods average 37 feet and 12.0 inches. Hardwood grade 1 trees average 44 feet and 13.3 inches. The average for all hardwood sawtimber is 30 feet and 10.1 inches.

Saw-log length and small end inside-bark diameter vary considerably for individual species. Many oaks, for example, have saw-log lengths shorter than average and top inside-bark diameters larger than average; sweetgum has a longer saw-log length and a smaller than average diameter.

Cull-tree Volume

Cull-tree timber is useful where bole quality is unimportant, such as for pulpwood. In Mississippi, cull volume totals 2.9 billion cubic feet (table XVII), or 15 percent of the growing-stock volume (fig. 22). Most of the cull volume is in hardwood trees, where it is 25 percent of growing-stock volume. Softwood cull has increased 43 percent since 1977 and hardwood cull, 22 percent. All survey regions had increased cull volume over the past 10 years, a trend commensurate with the increase in the number, basal area, and stocking of cull trees.

BIOMASS WEIGHTS AND SPECIES DISTRIBUTION

A total of 734.3 million dry-weight tons of woody biomass is on timberland in Mississippi (table XVIII). Most, 56 percent, is merchantable dry weight (the main stem of growing-stock trees); the rest is contained in nonmerchantable, residual portions of trees. Hardwood biomass is 69 percent of the total.

The hardwood forest types, oak-hickory and bottomlands, contain more biomass than other types (table XIX). Nonindustrial private owners hold most of the biomass.

A total of 101 different species was sampled, including 10 softwood species and 91 hardwood species. Loblolly pine *(Pinus taeda)* is the species with the most total dry-weight biomass statewide and in all regions except the Delta (tables XXa-XXf).

Table XV.—*Sawtimber volume by tree grade,*[1] *tree size, and species group, Mississippi, 1977 and 1987*[2,3]

Tree grade	1987 Softwood 9.0–14.9	1987 Softwood 15.0+	1987 Hardwood 11.0–14.9	1987 Hardwood 15.0+	1977 Softwood 9.0–14.9	1977 Softwood 15.0+	1977 Hardwood 11.0–14.9	1977 Hardwood 15.0+
	Million board feet							
1	2,032.2	4,068.3	......	2,890.8	2,467.8	4,194.4	......	3,790.6
2	3,179.1	3,636.5	955.3	5,828.9	3,669.7	3,594.1	1,252.0	4,334.7
3	17,384.3	9,296.8	7,412.8	8,013.7	15,864.8	6,003.1	6,510.0	4,432.6
Tie and timber	......	......	4,020.8	4,490.6	......	......	2,994.0	2,322.7
Total	22,595.6	17,001.6	12,388.8	21,224.0	22,002.3	13,791.5	10,755.9	14,880.8

[1] Tree grade determined by grade of the butt log.

[2] Columns may not add due to rounding.

[3] International 1/4-inch rule.

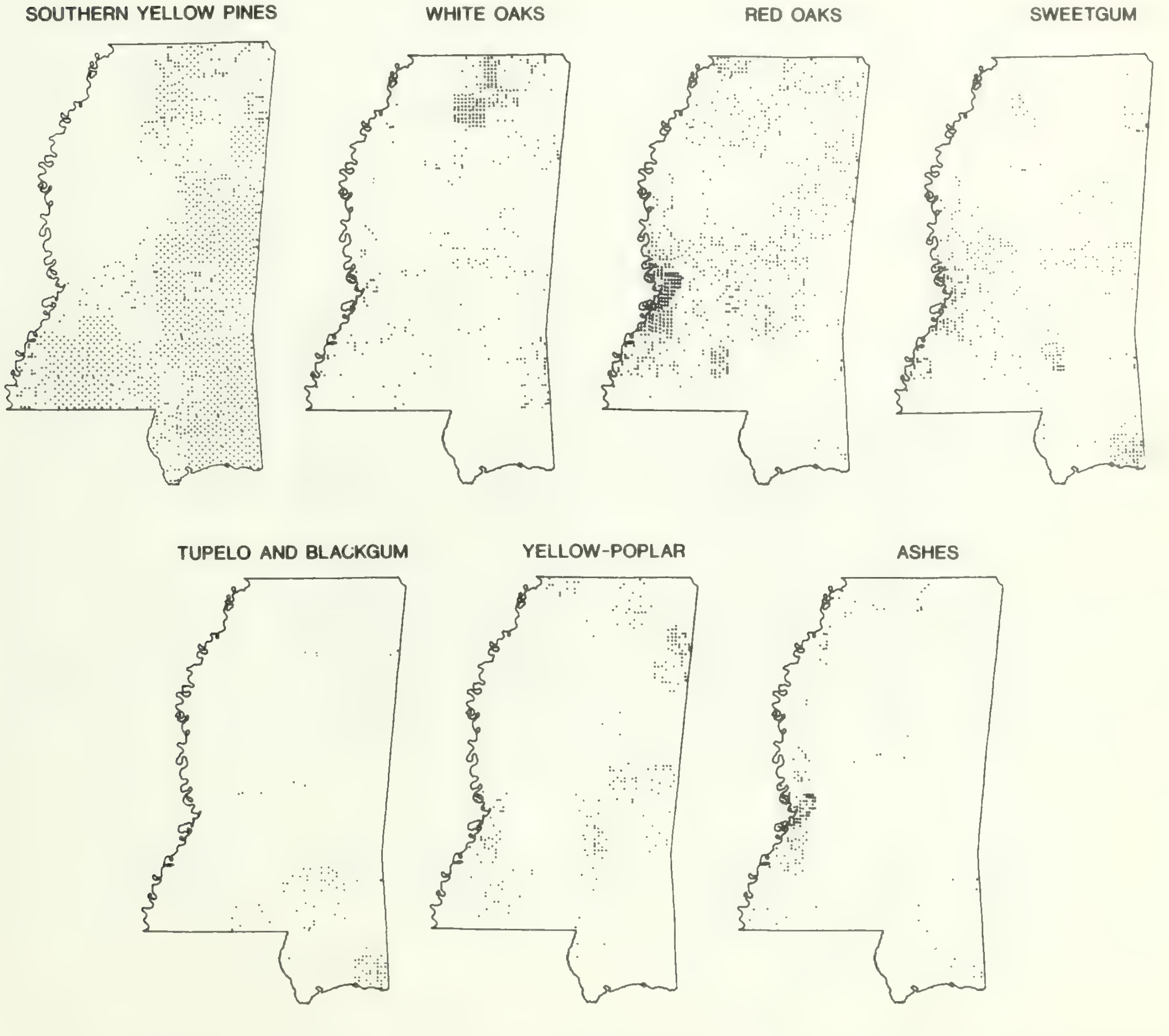

Figure 21.— *Distribution of sawtimber volume in tree grade 1, Mississippi, 1987. Each dot represents 1 million board feet.*

Table XVI.— *Avreage saw-log length and saw-top inside bark diameter of sawtimber by tree grade*[1]*, species group, and size class, Mississippi, 1987*

Tree grade	Softwood				Hardwood			
	Tree size (d.b.h. in inches)							
	9–14.9		15.0+		11–14.9		15.0+	
	Inches	*Feet*	*Inches*	*Feet*	*Inches*	*Feet*	*Inches*	*Feet*
	Saw-top diameter	Saw-log length	Saw-top diameter	Saw-log length	Saw-top diameter	Saw-log length	Saw-top diameter	Saw-log length
1	7.0	38	9.7	60	......	......	13.3	44
2	6.9	45	9.4	57	9.4	36	12.1	39
3	6.8	40	9.3	50	8.9	27	11.8	35
Tie and timber	......	......	......	......	9.0	25	11.9	34
All grades	6.8	38	9.4	54	9.0	26	12.0	37

Tree grade determined by grade of butt log.

Table XVII.—*Volume of cull trees by survey region, species group, and change since 1977, Mississippi, 1987*[1]

Survey region	All species		Softwood		Hardwood	
	Volume	Change	Volume	Change	Volume	Change
	Million cubic feet	*Percent*	*Million cubic feet*	*Percent*	*Million cubic feet*	*Percent*
Delta	473.8	37	13.8	5	460.0	38
North	732.0	18	70.4	76	661.6	14
Central	576.8	23	102.9	45	473.8	19
South	565.4	33	78.4	61	487.1	29
Southwest	523.7	14	58.6	7	465.2	15
All regions	2,871.7	24	324.1	43	2,547.6	22

[1] Rows and columns may not add due to rounding.

Table XVIII.—*Dry weight of forest biomass on timberland by biomass category and survey region, Mississippi, 1987*[1]

Survey region	Total dry weight			Merchantable dry weight			Residual dry weight		
	All species	Softwood	Hardwood	All species	Softwood	Hardwood	All species	Softwood	Hardwood
	Million tons								
Delta	82.6	3.1	79.5	42.9	2.3	40.6	39.7	0.8	38.9
North	192.2	49.6	142.6	105.3	37.1	68.2	86.9	12.5	74.3
Central	175.6	66.4	109.3	103.2	50.3	52.9	72.5	16.1	56.4
South	147.9	65.9	81.9	82.7	47.0	35.7	65.2	18.9	46.2
Southwest	136.0	41.2	94.8	78.1	31.8	46.3	57.9	9.4	48.5
All regions	734.3	226.2	508.1	412.2	168.5	243.7	322.1	57.7	264.4

Rows and columns may not add due to rounding.

Table XIX.—*Total dry weight of woody biomass on timberland by forest type, ownership, and species group, Mississippi, 1987*[1]

Ownership	Species group	All types	Pine plantations[2]	Natural pine[3]	Oak-pine	Oak-hickory	Bottomland hardwoods[4]
				Million tons			
Public	Softwood	40.8	3.1	23.9	10.6	2.1	1.0
	Hardwood	62.5	0.6	8.8	13.6	17.2	22.2
	Total	103.3	3.8	32.7	24.2	19.3	23.2
Forest industry	Softwood	44.6	15.9	17.0	8.2	2.3	1.2
	Hardwood	65.7	3.6	5.9	10.7	19.2	26.3
	Total	110.3	19.5	22.9	18.9	21.5	27.5
Nonindustrial private	Softwood	140.8	15.0	70.3	36.3	14.0	5.1
	Hardwood	379.9	4.1	26.3	58.4	161.3	129.8
	Total	520.7	19.2	96.6	94.7	175.4	134.9
All owners	Softwood	226.2	34.0	111.3	55.1	18.5	7.3
	Hardwood	508.1	8.4	40.9	82.6	197.7	178.4
	Total	734.3	42.4	152.2	137.8	216.2	185.6

[1] Rows and columns may not add due to rounding.

[2] Plantation stands of longleaf-slash pine and loblolly-shortleaf pine forest types.

[3] Longleaf-slash pine and loblolly-shortleaf pine forest types of natural origin.

[4] Oak-gum-cypress and elm-ash-cottonwood forest types.

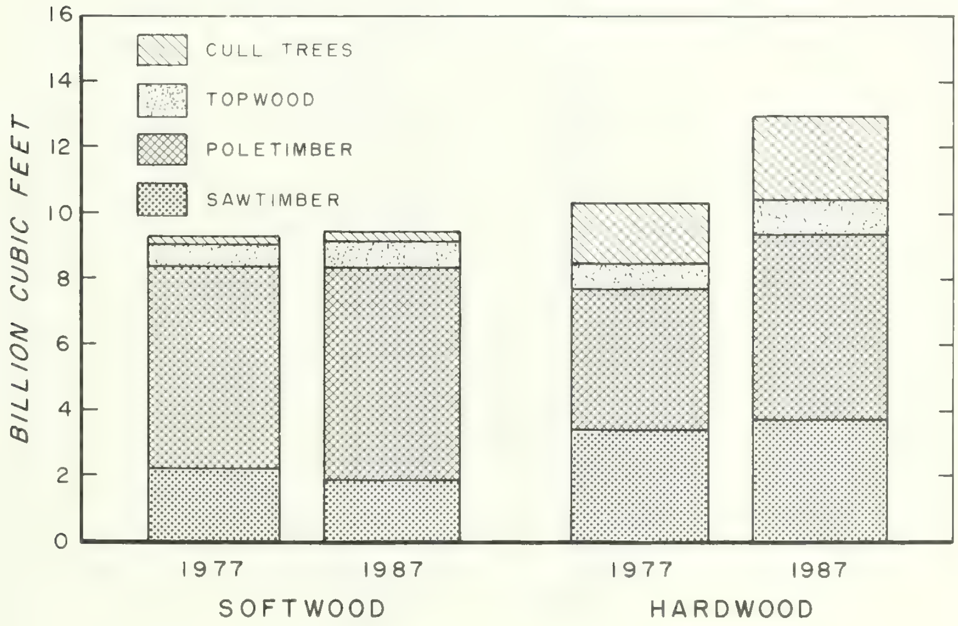

Figure 22.—*Volume of timber by species group and class of timber, Mississippi, 1977 and 1987.*

Table XXa.—*Total dry weight of all woody biomass, ranked by species, Mississippi, 1987*[1]

Species	Dry weight
	Million tons
Loblolly pine	134.62
Sweetgum	63.67
Water oak	53.97
Shortleaf pine	46.60
White oak	38.64
Southern red oak	35.87
Hickory	30.12
Cherrybark oak	24.25
Post oak	23.94
Blackgum	19.21
Slash pine	19.02
Willow oak	16.88
Longleaf pine	15.99
Yellow-poplar	14.24
Sugarberry	13.32
Red maple	13.25
Green ash	11.25
Flowering dogwood	10.74
American beech	9.11
Sweetbay	8.63
Overcup oak	8.43
Black oak	6.61
American hornbeam	6.23
Winged elm	6.01
Black cherry	5.32
Swamp tupelo	5.22
Swamp chestnut oak	5.08
American elm	5.07
Nuttall oak	4.87
Laurel oak	4.84
Spruce pine	4.71
Water hickory	4.23
Shumard oak	4.08
Sycamore	3.97
Cottonwood	3.64
Sourwood	3.49
White ash	3.46
Common persimmon	3.14
Boxelder	3.05
Willow	3.02
Eastern hophornbeam	2.85
Pecan	2.82
Scarlet oak	2.80
Water tupelo	2.57
Eastern redcedar	2.52
Baldcypress	2.46
Blackjack oak	2.43
River birch	2.01
Sassafras	1.76
Southern magnolia	1.04
51 other species	13.21
All species	734.25

Totals may not add due to rounding.

Table XXb.—*Total dry weight of all woody biomass, ranked by species, Delta region, 1987*[1]

Species	Dry weight
	Million tons
Sweetgum	9.24
Sugarberry	8.61
Green ash	5.05
Overcup oak	4.36
Nuttall oak	4.24
Water oak	3.93
Willow oak	3.79
Water hickory	3.61
Hickory	3.11
Cherrybark oak	2.71
Cottonwood	2.35
American elm	1.78
White oak	1.77
Pecan	1.76
Boxelder	1.73
Southern red oak	1.72
American beech	1.72
Willow	1.71
Sycamore	1.46
Water tupelo	1.36
Yellow-poplar	1.23
Baldcypress	1.05
Shortleaf pine	1.03
Shumard oak	0.97
White ash	0.92
Common persimmon	0.89
Eastern hophornbeam	0.82
American hornbeam	0.81
Loblolly pine	0.70
Sassafras	0.70
Flowering dogwood	0.69
Winged elm	0.49
Red maple	0.48
Black oak	0.46
Post oak	0.40
Swamp chestnut oak	0.36
Cedar elm	0.35
Black cherry	0.33
Slippery elm	0.32
Sugar maple	0.31
Honey locust	0.29
Eastern redcedar	0.28
Blackgum	0.27
Silver maple	0.26
Chinkapin oak	0.24
Water-elm	0.23
Red mulberry	0.20
White basswood	0.19
Chestnut oak	0.19
Black walnut	0.11
27 other species	0.94
All species	82.58

[1] Totals may not add due to rounding.

Table XXc.—*Total dry weight of all woody biomass, ranked by species, North region, 1987*[1]

Species	Dry weight
	Million tons
Loblolly pine	27.43
Shortleaf pine	20.30
Sweetgum	17.89
White oak	16.75
Southern red oak	15.56
Hickory	12.04
Post oak	10.76
Water oak	8.24
Cherrybark oak	6.98
Black oak	4.64
Willow oak	4.46
Red maple	4.14
Yellow-poplar	3.98
Flowering dogwood	3.49
Blackgum	3.14
Winged elm	2.57
Green ash	2.24
Scarlet oak	2.19
Overcup oak	1.88
River birch	1.66
Shumard oak	1.44
American beech	1.43
Eastern redcedar	1.42
Blackjack oak	1.31
White ash	1.26
Black cherry	1.16
Sugarberry	1.16
American elm	1.11
Common persimmon	1.08
Sourwood	1.03
Sycamore	1.03
American hornbeam	0.72
Northern red oak	0.64
Swamp chestnut oak	0.59
Willow	0.47
Black locust	0.43
Eastern hophornbeam	0.42
Boxelder	0.41
Water tupelo	0.39
Sweetbay	0.36
Laurel oak	0.34
Chestnut oak	0.34
Baldcypress	0.33
Sassafras	0.30
Slippery elm	0.29
Red mulberry	0.26
Nuttall oak	0.26
Black walnut	0.23
Osage-orange	0.21
Water hickory	0.18
31 other species	1.27
All species	192.16

[1]Totals may not add due to rounding.

Table XXd.—*Total dry weight of all woody biomass, ranked by species, Central region, 1987*[1]

Species	Dry weight
	Million tons
Loblolly pine	48.35
Sweetgum	16.03
Water oak	15.48
Shortleaf pine	13.08
White oak	9.83
Southern red oak	8.70
Hickory	8.28
Post oak	6.58
Willow oak	5.30
Cherrybark oak	4.77
Red maple	3.90
Blackgum	3.22
Yellow-poplar	2.96
Spruce pine	2.65
Flowering dogwood	1.91
American beech	1.79
Swamp chestnut oak	1.59
American hornbeam	1.53
Green ash	1.40
Overcup oak	1.30
Longleaf pine	1.28
Winged elm	1.24
Laurel oak	1.19
Sourwood	1.13
Black cherry	1.01
Shumard oak	0.96
Sweetbay	0.95
Black oak	0.87
Sugarberry	0.83
Swamp tupelo	0.80
Common persimmon	0.63
American elm	0.62
Blackjack oak	0.49
Slash pine	0.48
Eastern redcedar	0.42
White ash	0.36
Eastern hophornbeam	0.33
Sycamore	0.33
Sassafras	0.31
Willow	0.29
Water tupelo	0.23
American holly	0.20
Boxelder	0.17
Red mulberry	0.17
Durand oak	0.17
Baldcypress	0.14
Swamp white oak	0.14
Scarlet oak	0.13
Northern red oak	0.10
River birch	0.09
33 other species	0.96
All species	175.64

[1]Totals may not add due to rounding.

Table XXe.—*Total dry weight of all woody biomass, ranked by species, South region, 1987*[1]

Species	Dry weight
	Million tons
Loblolly pine	26.06
Slash pine	18.21
Longleaf pine	14.33
Water oak	12.45
Blackgum	10.67
Sweetbay	7.05
Sweetgum	6.32
Shortleaf pine	5.01
Southern red oak	4.54
Swamp tupelo	3.89
Red maple	3.72
Post oak	3.60
Yellow-poplar	3.46
White oak	3.20
Laurel oak	2.95
Flowering dogwood	2.62
Hickory	1.96
Willow oak	1.72
Spruce pine	1.26
Black cherry	1.22
Swamp chestnut oak	1.22
American hornbeam	1.16
Cherrybark oak	1.09
American beech	0.97
Green ash	0.92
Baldcypress	0.76
Overcup oak	0.63
American holly	0.53
Blackjack oak	0.51
Sourwood	0.47
Southern magnolia	0.40
American elm	0.31
Sparkleberry	0.29
Water tupelo	0.29
Pondcypress	0.27
Sugarberry	0.25
Common persimmon	0.25
Redbay	0.24
River birch	0.22
Scarlet oak	0.20
Water hickory	0.19
Winged elm	0.19
Shumard oak	0.18
Live oak	0.18
Sassafras	0.15
Black oak	0.12
Pecan	0.12
Turkey oak	0.12
Hawthorn	0.11
Sycamore	0.10
25 other species	1.20
All species	147.88

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[1] Totals may not add due to rounding.

Table XXf.—*Total dry weight of all woody biomass, ranked by species, Southwest region, 1987*[1]

Species	Dry weight
	Million tons
Loblolly pine	32.09
Sweetgum	14.19
Water oak	13.87
Cherrybark oak	8.68
Shortleaf pine	7.18
White oak	7.08
Southern red oak	5.35
Hickory	4.74
American beech	3.20
Yellow-poplar	2.62
Post oak	2.59
Sugarberry	2.47
Flowering dogwood	2.03
American hornbeam	2.01
Blackgum	1.91
Green ash	1.64
Willow oak	1.62
Black cherry	1.61
Winged elm	1.51
Swamp chestnut oak	1.32
American elm	1.27
Eastern hophornbeam	1.19
Cottonwood	1.18
Sycamore	1.05
Red maple	1.01
Pecan	0.87
Sourwood	0.85
White ash	0.82
Spruce pine	0.80
Boxelder	0.73
Southern magnolia	0.60
Shumard oak	0.53
Black oak	0.52
Willow	0.44
Swamp tupelo	0.43
Longleaf pine	0.38
Eastern redcedar	0.37
Laurel oak	0.33
Water tupelo	0.30
Honey locust	0.30
Common persimmon	0.30
Sassafras	0.29
Sweetbay	0.27
Nuttall oak	0.27
Overcup oak	0.23
American holly	0.23
Slash pine	0.21
Water hickory	0.21
White basswood	0.20
Red mulberry	0.19
31 other species	1.90
All species	136.00

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[1] Totals may not add due to rounding.

Sweetgum *(Liquidambar styraciflua)*, the most common hardwood, is second in importance statewide. Water oak *(Quercus nigra)* is the most common oak species[2].

GROWTH, REMOVALS, AND MORTALITY

Components of Change

Components of change are gross growth, mortality, and removals. Gross growth is defined as the sum of survivor growth, ingrowth, growth on removals, and growth on mortality, minus cull increment. Net growth is defined as gross growth minus mortality; net change is net growth minus removals. Procedures for calculating inventory change are presented in Van Deusen and others (1986); the method used for the Mississippi survey emphasizes additivity between the initial (1977) and final (1987) surveys; the initial inventory plus gross growth minus mortality and removals approximately equals the final inventory estimate. May (1988a) uses the North region of Mississippi as an example in presenting the operational considerations for calculating change.

All species are increasing a net 184.2 million cubic feet annually, but softwoods may be slightly declining (table XXI). The 11.3 million cubic-foot net decrease for softwoods is too small to indicate a definite decline; the small increase in softwood growing-stock volume is within the margin of error that would indicate no definite increase, and is thus not contradictory[3]. Hardwoods, on the other hand, are clearly increasing — by an estimated 195.5 million cubic feet annually.

The net change in growing stock for softwoods and hardwoods is dominated by survivor growth and removals. Survivor growth accounts for 71 percent of gross growth for all species. Softwood removals are larger than net growth, causing the net decrease. Hardwood removals, on the other hand, are smaller than net growth, allowing for the annual increase of 195.5 million cubic feet.

Timber removals come from two sources: timberland and land clearing (table XXI). Timberland removals include growing-stock trees harvested for industrial uses and those killed during logging and related activities and by cultural treatments. Ninety-three percent of the timberland removal was used, with most of the remainder in trees killed by logging and related activities. Only a small amount, about 1 percent of timberland removals, was in trees killed by cultural treatments. Much of the timber from land clearing is cut and used, but exactly how much is difficult to assess.

Cull increment, the change in growing-stock volume due to tree class change, contributed a small but distinctly negative factor for softwood net growth, due to trees changing from growing stock to cull class. Survey procedures allow tree class changes from cull to growing stock, as well as from growing stock to cull. Cull increment for hardwoods is dominated by trees moving to growing stock from the cull class, resulting in a negative cull increment (thereby being an *addition* to net growth).

Of the five survey regions in Mississippi, the volume of softwood growing stock declined in the Central and Southwest. The South region is essentially unchanged since the previous survey. The North region gained a modest net 12.5 million cubic feet annually, and although the Delta region showed an increase, little softwood grows in this region (table XXI).

Survivor growth is a dominant factor for sawtimber change, accounting for 58 percent of gross growth (table XXII). Removals are the other major factor in sawtimber change, as they are for growing stock. Softwood sawtimber removals are almost three times as large as hardwood sawtimber removals. Growth outweighs removals and mortality, as there is a net increase for both species groups.

Trends in Growth, Removals, and Mortality

The net change in softwood growing stock has gone from a large annual increase to an annual decrease (table XXIII). This change for softwoods has occurred because of a 15-percent reduction in growth and 35-percent increase in removals from the 1967 to 1977 period to the 1977 to 1987 period (fig. 23). Alternately, the net growth of hardwood growing stock increased 25 percent, while removals increased only 22 percent. The net annual change for hardwoods has thus increased 28 percent between the two periods.

Sawtimber growth and removals have both increased, but softwood sawtimber growth increased only 2 percent, as average annual removals increased 45 percent between the two periods (table XXIV). The net growth of softwood sawtimber exceeds removals by 18 percent, a considerable decline from its previous 67 percent. For hardwood sawtimber, net annual growth increased 40 percent; removals increased 32 percent.

An important factor in net growth trends is the increased mortality. Total growing-stock mortality has increased 28 percent, primarily because soft-

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[2] These are not all taxonomically distinct species; see list in the appendix.

[3] The small increase of 73.7 million cubic feet is less than 1 percent of softwood growing-stock volume. Sampling errors for net change and inventory estimates indicate no statistical difference between the 1977 and 1987 softwood inventories. See May (1988a) for a discussion of potential additivity problems that could affect estimates of change.

Table XXI.—*Components of average annual change in the volume of growing stock by species group and forest survey region, Mississippi, 1977–1987*

Forest survey region	Species group	Survivor growth[2]	Ingrowth[3]	Growth on removals	Growth on mortality	Cull increment	Mortality	Timberland removals	Land-clearing removals	Net change
		Million cubic feet								
Delta	Softwood	5.2	0.5	1.4	0.4	-0.03	1.0	5.1	0.1	1.4
	Hardwood	2.6	5.2	3.9	2.4	1.0	14.9	21.7	5.9	40.5
	Total	77.8	5.6	5.3	2.8	1.0	15.8	26.8	6.0	41.9
North	Softwood	91.9	14.4	28.9	9.2	1.2	21.0	102.5	7.1	12.5
	Hardwood	102.1	13.4	11.9	3.8	-2.6	18.7	61.3	11.2	42.7
	Total	194.0	27.8	40.8	13.1	-1.5	39.8	163.8	18.3	55.2
Central	Softwood	120.8	13.3	39.8	8.7	3.4	25.8	167.4	7.9	-21.9
	Hardwood	82.5	13.0	12.6	3.5	-0.5	15.3	63.2	3.7	29.9
	Total	203.3	26.4	52.4	12.2	2.9	41.1	230.5	11.6	8.1
South	Softwood	106.1	21.5	35.7	7.2	1.5	25.9	137.3	5.4	0.5
	Hardwood	57.2	11.4	7.0	2.5	-0.7	15.0	33.8	1.3	28.7
	Total	163.3	33.0	42.7	9.7	0.9	40.9	171.1	6.7	29.2
Southwest	Softwood	74.3	6.0	18.8	5.3	1.2	19.4	85.9	1.8	-3.8
	Hardwood	82.6	9.6	7.3	2.6	-3.1	12.8	37.5	1.2	53.7
	Total	156.9	15.7	26.2	7.9	-1.9	32.2	123.4	3.0	49.9
All regions	Softwood	398.3	55.7	124.7	30.8	7.3	93.1	498.1	22.2	-11.3
	Hardwood	396.9	52.6	42.7	14.9	-5.9	76.8	217.5	23.3	195.5
	Total	795.2	108.3	167.5	45.7	1.5	169.8	715.6	45.6	184.2

[1] Rows and columns may not add due to rounding.

[2] Includes nongrowth trees.

[3] Includes ongrowth trees.

Table XXII.—*Components of average annual change in the volume of growing stock by species group and forest survey region, Mississippi, 1977-1987*[1]

Forest survey region	Species group	Survivor growth[2]	Ingrowth[3]	Growth on removals	Growth on mortality	Cull increment	Mortality	Timberland removals	Land-clearing removals	Net change
		Million board feet[4]								
Delta	Softwood	14.4	9.2	4.7	0.8	0.6	1.6	15.7	0.3	10.9
	Hardwood	250.3	85.9	16.8	8.2	10.5	57.8	105.9	16.8	170.3
	Total	264.7	95.1	21.5	9.0	11.0	59.4	121.6	17.1	181.2
North	Softwood	302.2	169.0	115.1	14.2	-0.3	41.6	372.3	26.0	160.8
	Hardwood	284.3	157.7	36.9	7.0	-14.9	44.9	202.8	28.6	224.6
	Total	586.5	326.7	152.0	21.1	-15.2	86.5	575.1	54.6	385.4
Central	Softwood	526.6	192.8	181.7	23.7	8.0	72.0	733.6	22.9	88.3
	Hardwood	211.4	119.2	35.0	7.3	-10.0	40.3	197.4	7.2	138.1
	Total	738.0	312.0	216.8	31.0	-2.1	112.3	931.0	30.1	226.4
South	Softwood	364.9	170.7	127.7	16.4	3.2	84.9	527.2	19.4	45.1
	Hardwood	131.1	72.1	19.0	5.5	-1.9	42.8	106.1	2.6	78.2
	Total	496.1	242.8	146.7	21.9	1.3	127.7	633.3	21.9	123.3
Southwest	Softwood	362.5	95.9	101.1	19.3	5.1	73.7	425.2	4.1	70.9
	Hardwood	268.5	94.8	28.3	7.5	-22.5	33.7	142.8	3.2	241.9
	Total	631.0	190.7	129.4	26.9	-17.4	107.4	567.9	7.2	312.9
All regions	Softwood	1,570.7	637.6	530.3	74.5	16.5	273.9	2,073.9	72.7	376.1
	Hardwood	1,145.7	529.7	136.1	35.5	-38.9	219.5	755.0	58.3	853.0
	Total	2,716.4	1,167.3	666.4	109.9	-22.4	493.4	2,828.9	131.0	1,229.1

[1] Rows and columns may not add due to rounding.

[2] Includes nongrowth trees.

[3] Includes ongrowth trees.

[4] International 1/4-inch rule.

Table XXIII.—*Average annual change of growing-stock volume by change class, species group, and survey period, Mississippi*[1]

Survey period	Species group	Gross growth	Net growth	Removals	Net change
		Million cubic feet			
1967–77	Softwood	664.4	600.7	385.6	215.1
	Hardwood	436.0	349.9	197.1	152.9
	Total	1,100.4	950.7	582.7	368.0
1977–87	Softwood	609.5	509.1	520.4	-11.3
	Hardwood	507.2	436.3	240.8	195.5
	Total	1,116.7	945.4	761.2	184.2

[1] Totals may not add due to rounding.

Table XXIV.—*Average annual change of sawtimber volume by change class, species group, and survey period, Mississippi*[1]

Survey period	Species group	Gross growth	Net growth	Removals	Net change
		Million board feet			
1967–77	Softwood	2,653.4	2,474.3	1,480.6	993.6
	Hardwood	1,437.7	1,194.0	618.3	575.8
	Total	4,091.1	3,668.3	2,098.9	1,569.4
1977–87	Softwood	2,813.0	2,522.7	2,146.6	376.1
	Hardwood	1,846.9	1,666.3	813.3	853.0
	Total	4,660.0	4,189.0	2,959.9	1,229.1

[1] Totals may not add due to rounding.

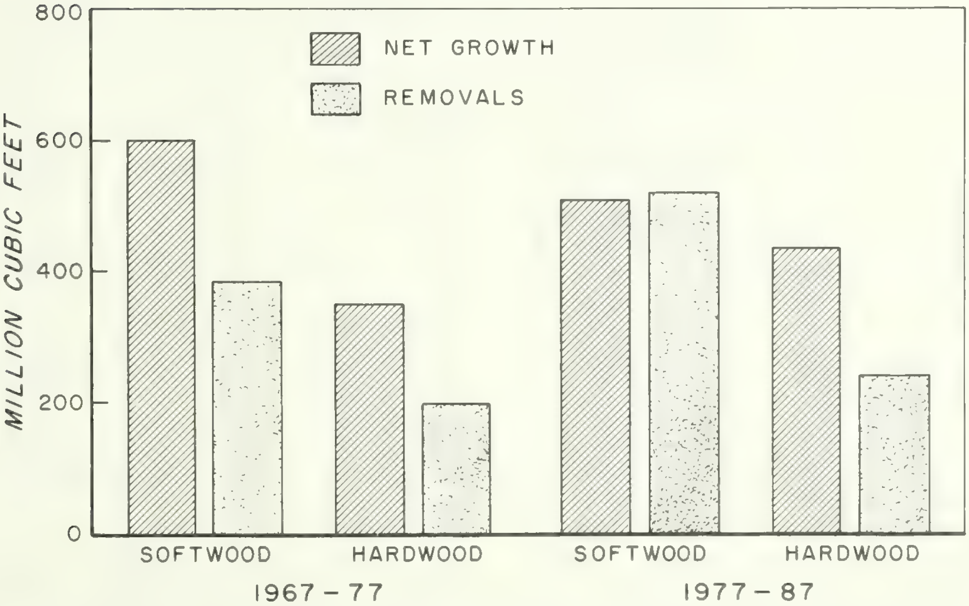

Figure 23.—*Average net annual growth and average annual removals of growing stock for softwoods and hardwoods, Mississippi, 1967 to 1976 and 1977 to 1986.*

wood mortality has increased 55 percent (to 93.1 million cubic feet annually) since the previous survey period. Hardwood growing-stock mortality increased only 5 percent (to 76.7 million cubic feet annually). Softwood mortality now exceeds hardwood, reversing the situation from the previous survey. Thus, the gross growth of softwood growing stock declined only 8 percent, but subtracting mortality to obtain net growth results in a 15-percent decline. Softwood sawtimber mortality has increased 61 percent, while hardwood has increased 7 percent.

Over the past two surveys Mississippi's forests have matured, concentrating growth in larger trees and diminishing the importance of ingrowth from smaller trees. Survivor growth accounts for 71 percent of gross growth for all species; ingrowth accounts for only 10 percent. In the 1967 to 1977 period survivor growth accounted for only 20 percent of gross growth, and ingrowth accounted for 65 percent. Yet, 1.7 million acres of plantations and 2.0 million acres of natural stands are 15 years of age or less. These stands will contribute a large volume of ingrowth as their trees enter merchantable size.

Growth and Removal Trends by Ownership

The decreasing net annual change for softwood growing stock is principally the result of growth and removals on land owned by forest industry (table XXV). Softwood removals exceed net growth on publicly owned timberland, but only by 0.5 million cubic feet. For industry-owned timberland, however, softwoods removals exceed net growth by 31.8 million cubic feet. Although industry owners control only 19 percent of the total timberland, 29 percent of all growing-stock removals are from their lands. Softwood growing stock on nonindustrial private ownerships is increasing at an average annual rate of 21.1 million cubic feet.

Table XXV.—*Average annual change of growing-stock volume by ownership, species group, and change class, Mississippi, 1977–87*[1]

Ownership	Species group	Gross growth	Net growth	Removals	Net change
		Million cubic feet			
Public	Softwood	76.9	57.2	57.7	-0.5
	Hardwood	50.2	38.6	14.0	24.7
	Total	127.2	95.8	71.7	24.2
Forest industry	Softwood	141.0	124.1	156.0	-31.8
	Hardwood	70.8	59.8	67.2	-7.4
	Total	211.8	183.9	223.2	-39.3
Nonindustrial private	Softwood	391.5	327.8	306.7	21.1
	Hardwood	386.2	337.9	159.7	178.2
	Total	777.7	665.7	466.4	199.3
All owners	Softwood	609.5	509.1	520.4	-11.3
	Hardwood	507.2	436.3	240.8	195.5
	Total	1,116.7	945.4	761.2	184.2

[1] Totals may not add due to rounding.

Average net growth per acre of growing stock by ownership is as follows: forest industry, 58 cubic feet per acre per year; nonindustrial private, 56; and public, 50. Future ingrowth from classes that now are submerchantable should increase the figure for industry lands considerably. Industry owns 34 percent of all stands 15 years old and younger and 58 percent of all plantations less than 15 years old.

Sawtimber volume is increasing on all ownerships except forest industry, where softwoods and hardwoods are decreasing (table XXVI). The decline of sawtimber on industry land is the result of harvesting; 28 percent of sawtimber removals is from industry land.

Average per-acre growth rates of sawtimber by ownership are as follows: public, 251 board feet per acre per year; nonindustrial private, 250; and forest industry, 23. Thus, while growing-stock growth rates are highest on industry timberland, little of the growth is in sawtimber volume.

Growth and Removals of All Live Timber

As with growing stock, all live volume is declining slightly for softwoods and increasing for hardwoods (table XXVII). All live trees includes both growing stock and cull trees. The calculation of growth for all live trees is similar to that for growing stock, except cull increment is not applicable because any change in tree class is not relevant. The net annual increase in live volume for all species is 229.9 million cubic

Table XXVI.—*Average annual change of sawtimber volume by ownership, species group, and change class, Mississippi, 1977–87*[1]

Ownership	Species group	Gross growth	Net growth	Removals	Net change
		Million board feet[2]			
Public	Softwood	414.6	330.8	289.2	41.6
	Hardwood	188.3	151.6	46.7	104.9
	Total	602.9	482.4	335.9	146.5
Forest industry	Softwood	560.6	525.8	605.1	-79.2
	Hardwood	247.7	214.3	231.7	-17.4
	Total	808.3	740.1	836.8	-96.6
Nonindustrial private	Softwood	1,837.9	1,666.0	1,252.3	413.7
	Hardwood	1,410.9	1,300.4	534.8	765.6
	Total	3,248.8	2,966.5	1,787.2	1,179.3
All owners	Softwood	2,813.0	2,522.7	2,146.6	376.1
	Hardwood	1,846.9	1,666.3	813.3	853.0
	Total	4,660.0	4,189.0	2,959.9	1,229.1

[1] Totals may not add due to rounding.

[2] International 1/4-inch rule.

feet, about 25 percent greater than the net change for growing stock. The additional volume provided by cull trees offers opportunity for timber utilization.

Net growth for all live trees is greater than growing-stock growth by 5 percent for softwoods, 21 percent for hardwoods, and 12 percent for all species. Removals of all live trees exceeds removals for growing stock as follows: 3 percent for softwoods, 23 percent for hardwoods, and 9 percent for all species. Because hardwoods are more commonly classed as culls, the increase in hardwood growth and removals is greater than for softwoods.

MANAGEMENT TREATMENTS

No management treatments were noted on 9.2 million acres, or 54 percent of Mississippi's timberland, during the 1977 to 1987 period (table XXVIII). Some type of timber harvest (which involves the cutting of crop trees and excludes single-tree selection) occurred on 6.2 million acres, or 37 percent of the timberland. Most of the harvesting, 5.7 million acres, was on privately owned timberland (McWilliams 1988). Sixty-two percent of industry land was treated compared with 45 percent of public and 43 percent of nonindustrial private land. Management treatments include commercial thinning of poletimber trees on 220,700 acres; other treatments (including precommercial thinnings and stand improvement measures) were on 1.4 million acres.

Table XXVII.—*Average annual change of all live volume by change class, survey region, and species group, Mississippi, 1977–1987*[1]

Survey region	Species group	Gross growth	Net growth	Removals	Net change
		Million cubic feet			
Delta	Softwood	8.1	7.0	5.5	1.4
	Hardwood	110.0	85.7	33.3	52.4
	Total	118.1	92.7	38.8	53.9
North	Softwood	150.7	127.7	112.8	14.9
	Hardwood	167.4	138.1	92.9	45.2
	Total	318.1	265.8	205.6	60.2
Central	Softwood	190.9	162.5	181.7	-19.2
	Hardwood	139.7	114.5	79.9	34.9
	Total	330.7	227.3	261.6	15.7
South	Softwood	179.1	150.4	146.9	3.4
	Hardwood	105.9	80.7	42.6	38.1
	Total	285.0	231.2	189.6	41.6
Southwest	Softwood	110.1	88.1	90.9	-2.9
	Hardwood	129.4	108.2	46.7	61.5
	Total	239.5	196.3	137.7	58.6
All regions	Softwood	638.9	535.7	537.9	-2.2
	Hardwood	652.5	527.5	295.4	232.1
	Total	1,291.4	1,063.2	833.3	229.9

[1] Totals may not add due to rounding.

Sixty-five percent of the timber harvesting was by partial cutting, which includes all selection cuts (except single-tree selection), diameter-limit cuts, salvage cuts, and any other sawtimber cutting practice leaving a residual stand of crop trees or potential crop trees and cull trees. Clearcuts accounted for most of the remaining area harvested. Seed tree and shelterwood cuts accounted for only 1 percent of the harvested area.

Clearcuts are far more prevalent on industry ownerships than elsewhere (McWilliams 1988). Clearcuts account for 61 percent of all timberland harvested on forest industry land, while public and nonindustrial private owners used clearcutting on about 25 percent of the area harvested.

MANAGEMENT OPPORTUNITIES

The average growth of Mississippi's forests is far below its potential. The potential growth of fully stocked natural stands was calculated by use of site class midpoints and by summing for all acres by site class. The average potential growth for fully stocked natural stands is 122 cubic feet per acre per year. This average potential is not a maximum; effective management techniques such as planting genetically improved seedlings could result in even higher growth rates. The average annual growth rate for Mississippi's timberland during the 1977 to 1987 period was 56 cubic feet per acre per year, or less than one-half the potential growth for fully stocked natural stands.

The presence of cull or damaged trees and the relatively sparse stocking of desirable trees indicate an opportunity for regeneration, salvage cuts, and other stocking control in Mississippi's forests. Other opportunities include thinning, stand conversion, and regeneration cuts. The criteria for determining treatment opportunities did not include converting well-stocked upland hardwood stands to pine, but some landowners will wish to consider this alternative.

Forty-seven percent of the existing timberlands need no treatment to improve growth (table XXIX). The majority of timberland, however, could benefit from treatment. These estimates do not account for the economic feasibility of treatment but consider stand characteristics that contribute to reducing the growth rates of desirable trees.

Economic feasibility will depend greatly on the size of forest tracts. The per-acre cost of treatment can be lower for larger areas; the per-acre cost for

Table XXVIII.—*Area of timberland by type of harvest or management category, Mississippi, 1977–1987*[1]

All ownerships	All categories	No treatment	Timber harvest[2]				Other treatment[4]
			Clearcut	Partial cut[3]	Seed tree-shelterwood cut	Commercial thinning	
	Thousand acres						
Public	1,919.3	1,051.9	124.3	350.2	10.2	57.8	325.0
Forest industry	3,197.3	1,222.9	893.1	566.4	6.1	68.7	440.1
Nonindustrial private	11,865.0	6,925.1	1,081.0	3,134.1	41.3	94.1	589.4
All ownerships	16,981.6	9,200.0	2,098.4	4,050.6	57.6	220.7	1,354.4

[1] Totals may not add due to rounding.

[2] Harvest of crop trees only (does not include poletimber thinnings).

[3] Includes pine selection, diameter-limit, and salvage cuts; some heavy thinnings of dominant trees in sawtimber stands are included.

[4] Includes precommercial thinnings and stand improvement measures.

small areas may be prohibitive. Although a plurality of timberland is in the 501 to 2,500 acre tract size, 14 percent is in tracts 100 acres or less, and 2 percent is in tracts of 10 acres or less (table XXX).

Pine Stands

About two-thirds of the pine stands need no treatment (fig. 24) because they are well stocked with growing-stock trees, not overstocked, and have a low proportion of cull or damaged trees. One-third of the pine timberland needs stand establishment, intermediate treatment, or final harvest.

Stand establishment is needed on 338,400 acres, or 7 percent of all pine timberland. Most are stands that need to be regenerated as they have excessive cull-tree stocking or less than 50-percent stocking in growing-stock trees. In other stands the pines are poorly distributed for optimum growth, and hardwoods or cull trees present a problem. Regeneration of these acres will require site preparation in almost all cases. Conversion of poor-quality stands is needed on an additional 37,700 acres.

Intermediate treatments, mainly poletimber thinning and other stocking control, are needed on 607,800 acres of pine stands. Poletimber (commercial) thinning is indicated for 228,100 overcrowded acres to enable residual crop trees to grow vigorously. Other stocking control is a treatment opportunity on 369,900 acres of fully stocked sawtimber stands that have too many cull trees.

There are 649,100 acres of pine stands in need of final harvest. Most are over-stocked sawtimber stands that have more than 5,000 board feet per acre and would benefit from a regeneration cut. Salvage cuts are needed on 139,400 acres, where many salvable dead or damaged trees are present.

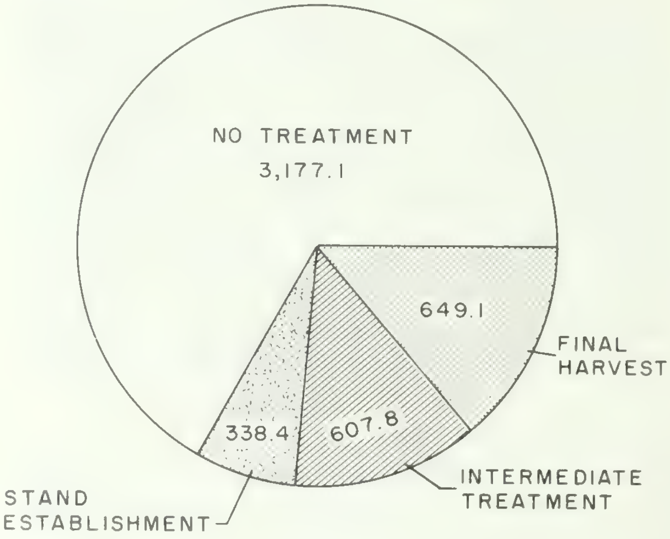

Figure 24.—*Pine stands in thousand acres by treatment opportunity, Mississippi, 1987.*

Mixed Stands

Of the 3.5 million acres of oak-pine forests in the State, almost one-half would benefit from intermediate treatments, stand establishment, or final harvest (fig. 25).

Intermediate treatment is a management option on 741,600 acres of oak-pine stands, of which 682,800 acres support seedling-sapling and poletimber stands that have adequate growing-stock stocking but an excessive amount of cull trees. Cutting or deadening of the cull trees (other stocking control) will provide better conditions for timber growing in these stands.

About 573,700 acres, or 16 percent of the entire oak-pine area, need stand establishment. Regeneration would benefit these acres because there is an excessive amount of cull-tree stocking and a small amount of growing stock.

For oak-pine stands, final harvest is a management option on 320,100 acres, and includes regeneration cuts on 117,200 acres and salvage cuts on 202,900 acres. Salvage cuts are needed mainly in sawtimber stands where trees are damaged to the extent that bole form has been affected.

Table XXIX.—*Area of timberland by forest type, ownership, and treatment opportunity class, Mississippi, 1987*[1]

Forest type and ownership	Total	No treatment	Stand establishment		Intermediate treatments			Final harvest	
			Regenerate	Stand conversion[2]	Thin seedlings and saplings	Thin poletimber	Other stocking control[3]	Regeneration cut	Salvage cut
	Thousand acres								
Pine plantation[4]									
Public	84.2	65.1	5.7	......	......	13.3	......	......	......
Forest industry	818.2	514.6	55.6	13.8	5.5	68.7	93.5	41.3	25.2
Nonindustrial private	635.3	413.3	29.7	5.9	4.3	48.9	91.4	36.8	5.0
Total	1,537.7	993.0	91.1	19.7	9.8	131.0	185.0	78.2	30.1
Natural pine[5]									
Public	581.2	423.0	32.2	......	......	13.1	10.9	75.4	27.0
Forest industry	496.9	331.7	17.6	......	......	24.9	37.2	67.8	17.6
Nonindustrial private	2,156.1	1,429.4	159.8	18.0	......	59.2	136.7	288.3	64.7
Total	3,234.5	2,184.1	209.6	18.0	......	97.1	184.9	431.5	109.3
Oak-pine									
Public	481.2	307.4	49.1	......	......	4.9	51.9	41.8	26.1
Forest industry	668.3	356.1	63.9	18.2	5.4	......	191.1	5.7	27.9
Nonindustrial private	2,373.4	1,224.0	425.4	17.2	......	48.5	439.8	69.7	148.9
Total	3,522.9	1,887.5	538.3	35.4	5.4	53.4	682.8	117.2	202.9
Upland hardwood									
Public	387.6	164.9	56.0	7.3	......	......	44.7	6.1	108.6
Forest industry	738.9	250.2	206.5	11.6	22.3	......	174.7	6.3	67.4
Nonindustrial private	4,358.7	1,588.7	1,154.1	98.2	5.5	36.3	729.3	31.8	714.8
Total	5,485.2	2,003.9	1,416.6	117.0	27.8	36.3	948.7	44.1	890.8
Bottomland hardwood									
Public	384.7	102.7	92.5	......	......	......	42.6	5.5	141.5
Forest industry	475.0	152.7	114.6	17.1	......	5.7	23.2	7.0	154.8
Nonindustrial private	2,341.5	720.9	482.3	32.2	......	17.3	226.9	49.6	812.3
Total	3,201.2	976.4	689.3	49.3	......	23.0	292.7	62.0	1,108.6
All types									
Public	1,919.3	1,063.3	235.5	7.3	......	31.3	150.2	128.7	303.1
Forest industry	3,197.3	1,605.2	458.2	60.6	33.3	99.3	519.7	128.1	292.8
Nonindustrial private	11,865.0	5,376.3	2,251.3	171.5	9.8	210.1	1,624.1	476.2	1,745.7
Total	16,981.6	8,044.8	2,944.9	239.4	43.0	340.8	2,294.1	733.1	2,341.6

Totals may not add due to rounding.

[2] Stands containing considerable stocking of damaged or diseased trees but with insufficient merchantable volume to warrant a salvage cut.

[3] Clean, release, or cull-tree removal.

[4] Includes longleaf-slash pine and loblolly-shortleaf pine stands of artificial origin.

[5] Includes longleaf-slash pine and loblolly-shortleaf pine stands having no evidence of artificial origin.

Table XXX.—*Area of timberland by forest type and size of forest tract, Mississippi, 1987*

	Size of forest tract (acres)							
Forest type	All classes	1–10	11–50	51–100	101–500	501–2,500	2,501–5,000	More than 5,000
	Thousand acres							
Longleaf-slash	841.5	5.7	37.1	38.3	191.4	464.2	88.5	16.2
Loblolly-shortleaf	3,930.7	61.8	213.7	196.1	1,169.8	1,648.7	282.6	358.2
Oak-pine	3,522.0	55.5	151.7	239.6	1,005.3	1,408.8	393.6	269.4
Oak-hickory	5,477.2	132.3	259.3	497.5	1,595.7	1,954.6	619.1	418.6
Oak-gum-cypress	3,051.7	34.1	122.1	278.5	682.2	1,114.4	454.0	366.3
Elm-ash-cottonwood	149.5	5.8	6.6	......	30.6	62.3	22.2	21.9
All types	16,973.5	295.3	790.4	1,249.1	4,675.0	6,653.0	1,859.9	1,450.7

Rows and columns may not add due to rounding.

Tract size indicates contiguous forest land and does not indicate size of ownership.

Does not include 8.1 thousand acres of nontyped timberland.

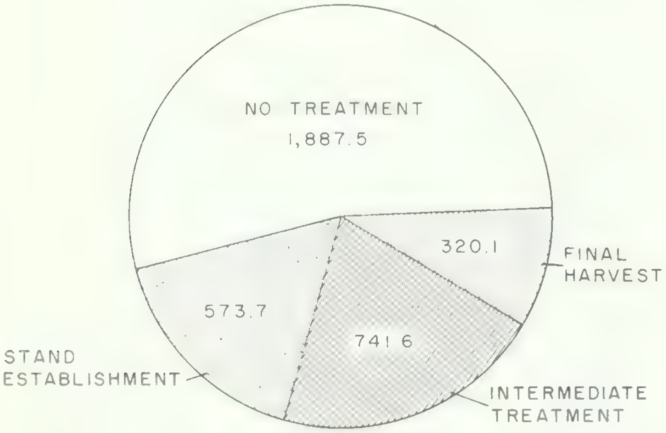

Figure 25.—*Oak-pine stands in thousand acres by treatment opportunity, Mississippi, 1987.*

Hardwood Stands

Hardwood stands are generally in poor condition: 63 percent of upland hardwood stands and 69 percent of bottomland hardwood stands—or 66 percent of all hardwood stands—need treatment for increased timber productivity (fig. 26).

Stand establishment is an option on 26 percent of hardwood stands. For most, growing-stock stocking is low, and/or cull stocking is high enough to warrant regeneration. Even where growing stock is adequate, cull-tree stocking is often excessive. Intermediate treatment is an option on 15 percent of the hardwood area, mainly through cutting or deadening of cull trees. Final harvest and regeneration is an option on 2.1 million acres, almost all of which have trees damaged to the extent that salvage cuts are needed.

TIMBER OUTLOOK

The current resource conditions will essentially determine the character of Mississippi's forests for the next decade or so. Beyond that, harvesting and the management practices currently being applied will be the major determinants. The large forest industry in the State will certainly continue to be a dominant factor in shaping the resource.

Over the next decade or so, Mississippi's forests can be expected to continue aging as cull-tree stocking increases, the number of large trees increases, and the hardwood-softwood ratio increases. Average tree sizes will continue to increase, but the amount of high-quality (grade 1) timber will probably decline. As softwood growth continues to decrease, removals may be expected to exceed growth by an increasing margin over the next several years (USDA FS 1988).

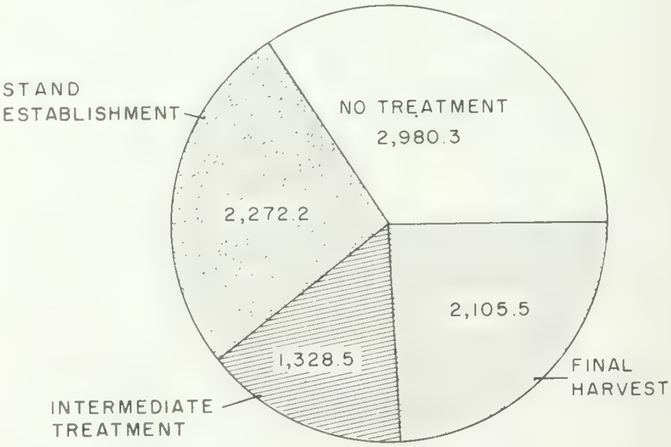

Figure 26.—*Hardwood stands in thousand acres by treatment opportunity, Mississippi, 1987.*

Increased management of pine stands, especially plantations, will be a major factor in future softwood trends. The young pine stands already established will contribute significantly to growth in the next few years, while additional plantations being established by industry and nonindustrial private owners (including those planted through the Conservation Reserve Program) will continue adding to softwood growth over the next several decades. The Southern timber supply study has estimated that softwood growth will begin rising and approximately equal removals in the year 2000. The balance between growth and removals is expected to be maintained for several decades thereafter (USDA FS 1988).

Changes in timber demands will affect the resource. Beginning in the early 1980's the increasing usage of hardwood pulpwood became evident. The harvest of this resource component is likely to increase, especially in regions where pulpwood harvest has traditionally been low, further reducing the presence of poletimber-size hardwoods in maturing stands.

Pulpwood harvest will be a major factor, along with aging stands, for prospective hardwood trends. Hardwood growth is likely to begin decreasing as mortality reaches sufficiently high levels. The Southern timber supply study has estimated that removals will surpass growth for hardwoods by the year 2000 (USDA FS 1988). The increasing stumpage prices that will likely be associated with increasing removals may be expected to boost interest in hardwood management, perhaps eventually stimulating additional growth.

Due to the current high levels of both softwood and hardwood inventories, the outlook for timber inventories in the near future is good, even if large declines occur for a few years because of removals exceeding growth. In spite of this generally favorable outlook there are potential inventory problems. These include the decline of best-quality timber, the decline of trees in poletimber and small-sawtimber size classes, and the diminishing of some species such as longleaf pine. Potential problems may also be evident for some regions, but not statewide.

TIMBER PRODUCTS OUTPUT

Mississippi's forests provided more than 950 million cubic feet of timber products in 1986 (table XXXI). Information on timber product output is derived from severance-tax collection data (Mississippi Cooperative Extension Service 1977-1987) and annual pulpwood reports (May 1988b). The use of industrial wood, excluding fuelwood, was 32 percent higher than at the end of the previous survey period in 1976 (Bertelson 1978). Forty-two percent of the timber harvested in 1986 was used for pulpwood and 40 percent for saw logs. The remainder was used for veneer logs (10 percent), fuelwood (6 percent), and other products (2 percent).

Softwoods are the most important source for saw logs, as they have been historically (fig. 27). Beginning in 1983, hardwoods have become more important for pulpwood, but softwoods still dominate (fig. 28).

Saw Logs

Saw-log production in Mississippi has averaged 282 million cubic feet over the past 10 years (Mississippi Cooperative Extension Service 1977–1987). Softwoods have accounted for the vast majority of saw-log production—76 percent of the total over the past 10 years. This proportion of softwood to hardwood saw-log volume has remained relatively constant throughout recent years. Softwood saw-log production hit a 10-year peak in 1979, while hardwood saw-log production peaked in 1978. The low point for saw-log production in the past decade was reached in 1982.

The production of saw logs in 1986 was 31 percent higher than at the end of the previous survey period in 1976 (Bertelson 1978). Softwood saw-log production increased 39 percent, while hardwoods increased 14 percent.

Pulpwood

Pulpwood production in Mississippi over the past 10 years has averaged just under 6 million cords

Table XXXI.—*Volume of roundwood timber harvested by source of material, product, and species group, Mississippi, 1986*

Product	All sources			Growing stock		
	All species	Softwood	Hardwood	All species	Softwood	Hardwood
	Million cubic feet					
Saw logs	378.1	279.3	98.9	372.0	275.4	96.6
Pulpwood	397.8	241.3	156.5	364.4	226.7	137.7
Veneer logs	98.5	94.6	3.8	96.5	92.7	3.8
Fuelwood	59.4	1.5	57.9	19.6	0.6	19.0
Other products	23.1	20.5	2.6	22.1	19.9	2.2
All products	956.9	637.2	319.7	874.6	615.4	259.2

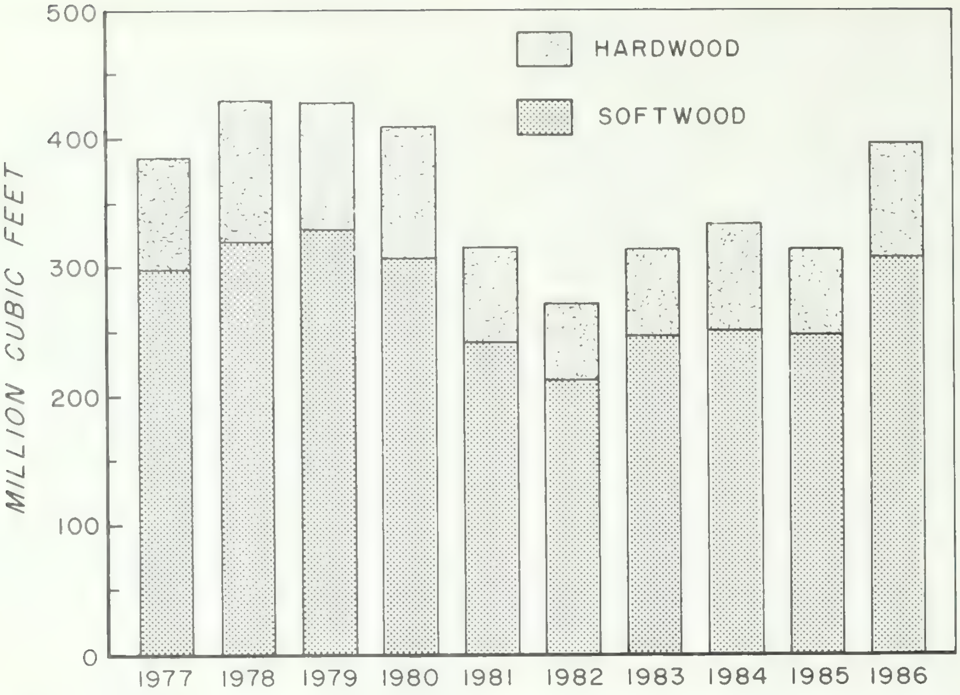

Figure 27.—*Saw logs and other timber products, except pulpwood, produced in Mississippi, 1977 to 1986.*

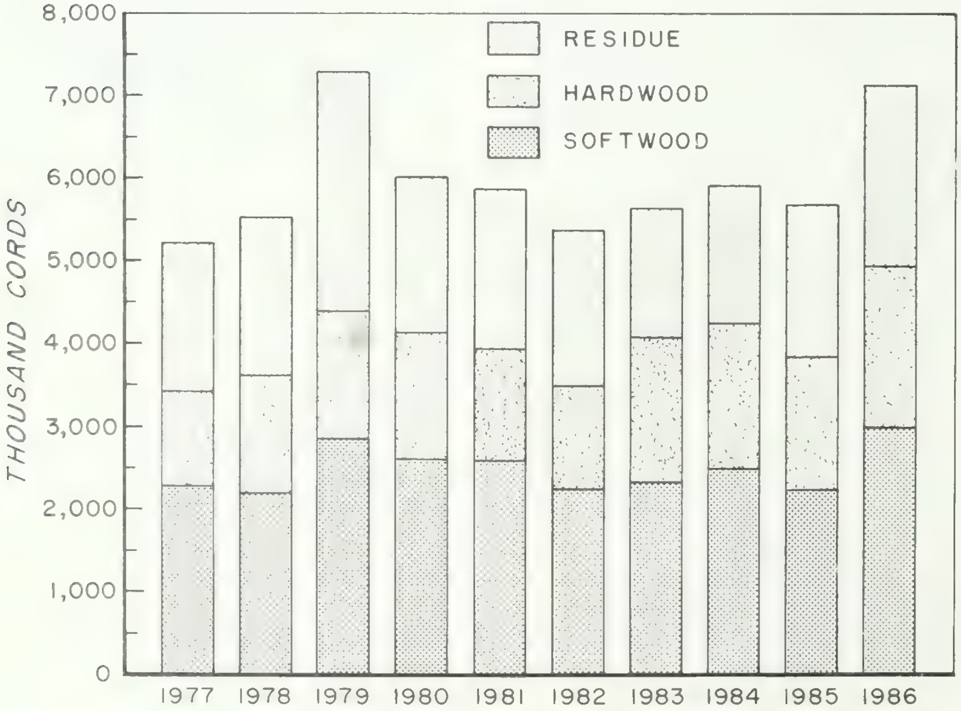

Figure 28.—*Pulpwood production in Mississippi, 1977 to 1986.*

Table XXXII.—*Pulpwood production by source and year, Mississippi, 1977–1986*

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
	Thousand cords									
Roundwood										
Softwood	2,276.7	2,198.2	2,855.6	2,606.1	2.584.3	2,236.8	2,313.3	2,475.6	2,236.4	2,979.4
Hardwood	1,134.7	1,422.0	1,542.3	1,523.4	1,348.4	1,249.0	1,767.9	1,764.0	1,602.6	1,956.2
Total	3,411.4	3,620.2	4,397.9	4,129.5	3,932.7	3,485.9	4,081.2	4,239.6	3,839.0	4,935.6
Residues										
Softwood	1,429.9	1,518.3	2,333.5	1,504.0	1,496.1	1,442.2	1,268.6	1,307.9	1,359.0	1,522.7
Hardwood	370.6	391.4	555.6	380.2	444.5	434.1	284.6	362.5	476.2	670.7
Total	1,800.5	1,909.7	2,889.1	1,884.2	1,940.6	1,876.3	1,553.1	1,670.4	1,835.2	2,193.4
All sources										
Softwood	3,706.6	3,716.5	5,189.1	4,110.1	4,080.4	3,679.0	3,581.9	3,783.5	3,595.4	4,502.1
Hardwood	1,505.3	1,813.4	2,097.9	380.2	1,792.9	1,683.1	2,052.5	2,126.5	2,078.8	2,626.9
Total	5,211.9	5,529.9	7,287.0	6,013.7	5,873.3	5,362.2	5,634.3	5,910.0	5,674.2	7,129.0

Totals may not add due to rounding.

annually (table XXXII, May 1988b), two-thirds of which is roundwood, with the remainder residues. In 1977, 33 percent of the roundwood pulpwood produced was hardwood; by 1986, 40 percent was hardwood. The use of hardwood residues has similarly increased.

During the past decade total pulpwood production peaked in 1979 at 7.3 million cords and was lowest in 1982 with 5.4 million cords.

Seven pulpmills are located in Mississippi, having a total pulping capacity of 9,250 tons per 24 hours. Seven other mills draw on the State's timberland for pulpwood.

Other Products and Fuelwood

Production of veneer logs is another important use of timber in Mississippi. In 1986, veneer log volume was about 26 percent of saw-log volume (Mississippi Cooperative Extension Service 1977–1987). Almost all veneer logs in the State are softwood, used for producing southern pine plywood. A small amount of hardwood veneer is produced.

Other products include posts, poles, and piling. Total volume for all other products amounted to 23.1 million cubic feet in 1986, or 2 percent of the total volume of timber produced in the State.

Fuelwood usage in 1986 was 59.4 million cubic feet, or 6 percent of total timber volume.

LITERATURE CITED

Bertelson, Daniel F. 1978. Mississippi forest industries, 1976. Resour. Bull. SO-68. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 25 p.

Forest Economics Staff. 1946. Basic data on forest area and timber volumes from the Southern forest survey, 1932–36. Forest Survey Release 54. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 26 p.

Holemo, Fred J.; Brown, E.E. 1975. A profile of the private non-industrial forest landowner in Georgia's coastal plain. Research Paper 82. Georgia Forest Research Council. 17 p.

James, Lee M. 1951. Mississippi's forest resources and industries. Forest Resource Rep. No. 4. Washington, DC: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 92 p.

Kelly, John F.; Hines, F. Dee. 1987a. Forest statistics for north Mississippi counties—1987. Resour. Bull. SO-122. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 39 p.

Kelly, John F.; Hines, F. Dee. 1987b. Forest statistics for south Mississippi counties—1987. Resour. Bull. SO-124. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 34 p.

Kelly, John F.; Hines, F. Dee. 1987c. Forest statistics for Mississippi Delta counties—1987. Resour. Bull. SO-126. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 34 p.

Kelly John F.; Hines, F. Dee. 1987d. Forest statistics for central Mississippi counties—1987. Resour. Bull. SO-127. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 34 p.

Kelly John F.; Hines, F. Dee. 1987e. Forest statistics for southwest Mississippi counties—1987. Resour. Bull. SO-128. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 33 p.

May, Dennis M. 1988a. Forest growth of Mississippi's North unit—a case study of the Southern Forest Survey's growth estimation procedures. Resour. Bull. SO-134. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 9 p.

May, Dennis M. 1988b. Southern pulpwood production, 1986. Resour. Bull. SO-138. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 40 p.

McWilliams, William H. 1988. Status of privately owned harvested timberland in Mississippi, 1977–1987. Res. Note SO-346, New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 6 p.

Mississippi Cooperative Extension Service. 1977–1987. Unpublished annual newsletter reporting harvest of forest products. Mississippi State, MS: Mississippi State University. [not paged]

Murphy, Paul A. 1978. Mississippi's forest trends and outlook. Resour. Bull. SO-67. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 32 p.

Porterfield, Richard L.; Terfehr, Thomas R.; Moak, James E. 1978. Forestry and the Mississippi economy. Bulletin 869. Mississippi State, MS: Mississippi Agricultural and Forestry Experiment Station. 51 p.

Schallau, Con H.; Maki, Wilbur R.; Foster, Bennett B.; Redmond, Clair H. 1988. Mississippi's forest products industry: performance and contribution to the State's economy, 1970 to 1980. Res. Paper PNW-398. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 22 p.

U.S. Department of Agriculture, Forest Service. 1949. Forest statistics for Mississippi. Forest Survey Release 59. New Orleans, LA: Southern Forest Experiment Station. 67 p.

U.S. Department of Agriculture. 1958. Mississippi's forests. Forest Survey Release 81. New Orleans, LA: Southern Forest Experiment Station. 52 p.

U.S. Department of Agriculture, Forest Service. 1988. The South's fourth forest: alternatives for the future. For. Resour. Rep. 24. Washington, DC: U.S. Department of Agriculture 512 p.

Van Deusen, Paul C.; Dell, Tom R.; Thomas, Charles E. 1986. Volume growth estimation from permanent horizontal points. Forest Science. 32(2):415–422.

Van Sickle, Charles C.; Van Hooser, Dwane D. 1969. Forest resources of Mississippi. Resour. Bull. SO-17. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 33 p.

APPENDIX

Survey Methods

Forest resource statistics were obtained by a systematic sampling method involving forest-nonforest classification on aerial photographs, ground checks of land use, and on-the-ground measurements of trees at selected locations. Inventory volume and area statistics are required to give precise answers at the State level to one standard deviation of the total, equal to 1 percent per million acres of forest land and to 5 percent per billion cubic feet.

The estimate of timberland area is based on the forest-nonforest photo interpretation of recent aerial photography for points representing approximately 230 acres. The photo interpretation of these points was checked in the field at sample locations representing approximately 3,840 acres. These field checks are used to correct photo interpretation errors and adjust the proportion of forest to nonforest area for each county. The proportion of forest area is combined with U.S. Census land area data to develop county-level forest statistics.

Volume estimates come entirely from permanent sample locations at the intersection of a 3- by 3-mile grid. This grid gives each sample plot an expansion factor representing, on the average, 5,760 acres. The plots established by the prior survey were remeasured to determine the elements of change. In Mississippi, 3,003 plots were measured — 2,899 of these are currently forested; 10 points were measured at each plot location. Trees 5.0 inches in d.b.h. and larger were selected with a 37.5-factor prism, thus each tree selected with the prism represented 3.75 square feet of basal area per acre. Trees smaller than 5.0 inches in d.b.h. were tallied on a 1/275-acre circular plot fixed around the first 3 points of the 10-point cluster. Pine seedlings are tallied on a 1/1000-acre plot established at each of the 10 points.

A satellite point system is combined with a large-factor prism to get a representative sample of stand conditions at each plot location. This eliminates the effect that vegetation clumping and open gaps would induce if only one point or one fixed plot were used at each location.

Volumes in Mississippi were derived from deterministic measurements of trees on all sample locations. These deterministic measurements include d.b.h., bark thickness, total height, bole length, log length, and four upper-stem diameters. Volumes for these trees were computed by means of Smalian's formula. Volume equations were developed for seven species groups, and these equations were used to estimate volumes at time of removal or death for trees that did not survive the remeasurement period and to estimate the past volume for nongrowth trees (see definitions). Procedures for estimating growth are documented elsewhere (May 1988a).

Measurements at each forested location also included collection of data on site productivity, stand origin, stand age, size of forest tract, distance from road, slope, aspect, disturbance, management, evidence of use, and nontimber resources. Ownership information was obtained for each plot from county tax assessors' records and contact with owners in the field. Personnel from public agencies and other contacts were consulted when classifying absentee owners as farmers, individuals, corporations, or leasors.

Field work was started in April 1986 and completed in March 1987.

Reliability of the Data

Reliability of the Forest Inventory and Analysis (FIA) estimates may be affected by two sources of error. The first source, termed estimating error, arises from mistakes in measurement, judgment, recording, or compiling and from limitations of the equipment. Estimating error is minimized by FIA through comprehensive training, supervision, quality control programs, and emphasis on careful work.

The second type of error, "sampling error," is the error associated with natural and expected deviation of the sample mean from the true population mean. Thus, the deviation is susceptible to a mathematical evaluation of the probability of error. Sampling errors for State totals are based on one standard deviation (table XXXIII). That is, the chances are two out of three that if the results of a 100-percent census were known, the sample results would be within the limits indicated.

Estimates smaller than State totals will have larger sampling errors. The smaller the area examined, the larger the sampling error. Furthermore, as area or volume totals are stratified by forest type, species, diameter class, ownership, or other subunits, the sampling error increases and is greatest for the smallest divisions. The magnitude of this increase is depicted in table XXXIV and shows the sampling error to which the estimates are liable, two chances out of three.

Definition of Terms

Forest Land Classes

Forest Land—Land at least 16.7 percent stocked by forest trees of any size, or formerly having such tree cover, and not currently developed for nonforest uses. Minimum area considered for classification is 1 acre. Forest land is divided into commercial categories: timberland and deferred timberland; and

Table XXXIII.—*Sampling errors for estimates of total timberland area, volume, net annual growth (1977–1987), and annual removals (1977–1987), Mississippi, 1987*

Item	Total	Units	Percent sampling error
Timberland area	16,981.6	Thousand acres	0.3
Growing stock			
Volume	19,425.5	Million cubic feet	1.8
Periodic net annual growth	945.4	Million cubic feet	1.5
Periodic annual removals	761.2	Million cubic feet	2.7
Sawtimber			
Volume	73,209.9	Million board feet[1]	2.2
Periodic net annual growth	4,189.0	Million board feet[1]	1.8
Periodic annual removals	2,959.9	Million board feet[1]	3.1

[1] International 1/4-inch rule.

Table XXXIV.—*Sampling error to which estimates are liable, two chances out of three, Mississippi, 1987*[1]

Sampling error	Timberland area	Volume	Periodic net annual growth	Periodic annual removals	Volume	Periodic net annual growth	Periodic annual removals
Percent	*Thousand acres*	*Million cubic feet*			Million board feet[2]		
1.0	1,528.3	.....	......	......	.....	......	......
2.0	382.1	15,734.7	531.8	......	......	3,393.1	......
3.0	169.8	6,993.2	236.4	616.6	39,370.7	1,508.0	......
4.0	95.5	3,933.7	132.9	346.8	22,146.0	848.3	1,777.8
5.0	61.1	2,517.5	85.1	222.0	14,173.4	542.9	1,137.8
10.0	15.3	629.4	21.3	55.5	3,543.4	135.7	284.4
15.0	6.8	279.7	9.5	24.7	1,574.8	60.3	126.4
20.0	3.8	157.3	5.3	13.9	885.8	33.9	71.1
25.0	2.4	100.7	3.4	8.9	566.9	21.7	45.5

[1] By random sampling formula.
[2] International 1/4 -inch rule.

noncommercial categories: productive-reserved forest land and unproductive forest land.

Timberland—Forest land that is producing, or is capable of producing, crops of industrial wood and not withdrawn from timber utilization. Timberland is synonymous with "commercial forest land" in prior reports.

Deferred Timberland—National forest land that meets productivity standards for timberland but is under study for possible inclusion in the wilderness system.

Productive-Reserved Forest Land—Productive public forest land withdrawn from timber utilization through statute or administrative regulations.

Unproductive Forest Land—Forest land incapable of yielding crops of industrial wood because of adverse site conditions.

Tree Classes

Commercial Species—Tree species currently or prospectively suitable for industrial wood products. Excluded are noncommercial species. See Species List.

Noncommercial Species—Tree species of typical small size, poor form, or inferior quality that normally do not develop into trees suitable for industrial wood products. See Species List.

Growing-Stock Trees—Live trees of commercial species classified as sawtimber, poletimber, sapling, and seedlings. Trees must have a 12-foot butt log now or prospectively to be classed as growing stock.

Rough Trees—Live trees of commercial species that are unmerchantable for saw logs currently or potentially because of roughness or poor form in the butt log. Also included are all live trees of noncommercial species.

Rotten Trees—Live trees of commercial species that are unmerchantable for saw logs currently or potentially because of rot deduction in the butt log.

Cull Trees—Rough or rotten trees.

Hardwoods—Dicotyledonous trees, usually broadleaved and deciduous.

Softwoods—Coniferous trees, usually evergreen, having needles or scalelike leaves.

Live Trees—All trees that are alive. Included are all size classes and all tree classes.

Salvable Dead Trees—Standing or down dead trees that were formerly growing stock and are considered merchantable.

Forest Types

Longleaf-Slash Pine—Forests in which longleaf or slash pine, singly or in combination, comprise a plurality of the stocking. Common associates include oak, hickory, and gum.

Loblolly-Shortleaf Pine—Forests in which pine and eastern redcedar (except longleaf or slash pine), singly or in combination, comprise a plurality of the stocking. Common association include oak, hickory, and gum.

Oak-Pine—Forests in which hardwoods (usually upland oaks) comprise a plurality of the stocking, but in which softwoods, except cypress, comprise 25-49 percent of the stocking. Common associates include gum, hickory, and yellow-poplar.

Oak-Hickory—Forests in which upland oaks or hickory, singly or in combination, comprise a plurality of the stocking except where pines comprise 25-49 percent, in which case the stand would be classified oak-pine. Common associates include yellow-poplar, elm, maple, and black walnut.

Oak-Gum-Cypress—Bottomland forests in which tupelo, blackgum, sweetgum, oaks, or cypress, singly or in combination, comprise a plurality of the stocking except where pines comprise 25-49 percent, in which case the stand would be classified oak-pine. Common associates include cottonwood, willow, ash, elm, hackberry, and maple.

Elm-Ash-Cottonwood—Forests in which elm, ash, or cottonwood, singly or in combination, comprise a plurality of the live tree stocking. Common associates include willow, sycamore, beech, and maple.

Nontyped—Timberland currently unoccupied with any live trees or seedlings; e.g., very recent clear-cut areas.

Dimension Classes of Trees

Sawtimber Trees—Trees 9.0 inches and larger in d.b.h. for softwoods and 11.0 inches and larger for hardwoods.

Poletimber Trees—Trees 5.0 to 8.9 inches in d.b.h. for softwoods and 5.0 to 10.9 inches for hardwoods.

Saplings—Trees 1.0 inch to 4.9 inches in d.b.h.

Seedlings—Trees less than 1.0 inch in d.b.h.

Rough, Rotten, and Salvable Dead Trees— See "tree classes."

Stand Size Classes

Sawtimber Stands—Stands at least 16.7 percent stocked with growing-stock trees, half or more of this stocking in sawtimber or poletimber trees, and with sawtimber stocking at least equal to poletimber stocking.

Poletimber Stands—Stands at least 16.7 percent stocked with growing-stock trees, half or more of this stocking in sawtimber or poletimber trees, and with poletimber stocking exceeding that of sawtimber stocking.

Sapling-Seedling Stands—Stands at least 16.7 percent stocked with growing-stock trees, more than half of this stocking in saplings or seedlings.

Nonstocked Stands—Stands less than 16.7 percent stocked with growing-stock trees.

Stocking

Stocking is a measure of the extent to which the growth potential of the site is utilized by trees or preempted by vegetative cover. Stocking is determined by comparing the stand density in terms of number of trees or basal area with a specified standard. Therefore, full stocking is 100 percent of the stocking standard.

Defined below are arbitrarily defined stocking categories.

Understocked— Stands 0 to 60 percent stocked. These stands will take a very long time to reach full stocking. Meanwhile, poor bole form will result and much of the productivity will be placed on heavy limbs instead of the bole.

Optimally stocked— Stands 61 to 100 percent stocked. These stands are growing toward a fully stocked condition (ideal space required for each tree increases with age). Optimum growth and bole form occur in this range.

Overstocked— Stands greater than 100 percent stocked. These stands will become stagnant with mortality of individuals increasing as stocking increases over 100 percent.

The tabulation below shows the density standard in terms of trees per acre by size class required for full stocking.

D.b.h. (inches)	Number of trees	D.b.h. (inches)	Number of trees
Seedlings	600	16	72
2	560	18	60
4	460	20	51
6	340	22	42
8	240	24	36
10	155	26	31
12	115	28	27
14	90	30	24

Volume

Volume of Cull—The volume of sound wood in the bole of rough and rotten trees.

Volume of Growing Stock—Net volume of sound wood in the bole of sawtimber and poletimber trees from a 1-foot stump to a minimum 4.0-inch top outside bark or to the point where the central stem breaks into limbs. Rough, rotten, and noncommercial trees are excluded.

Volume of Sawtimber—Net volume of the saw-log portion of live sawtimber trees in board feet of the International rule (1/4-inch kerf). Net volume equals gross volume less deductions for rot, sweep, and other defects that affect use for lumber to the point where the central stem breaks into limbs. Rough, rotten, and noncommercial trees are excluded.

Volume of Timber—The volume of sound wood in the bole of growing stock, rough, rotten, and salvable dead trees 5.0 inches and larger in d.b.h. from stump to a minimum 4.0-inch top outside bark or to the point where the central stem breaks into limbs.

Biomass

Merchantable Dry Weight—Dry weight of woody biomass of all growing-stock trees greater than 5.0-inches in d.b.h. from a 1-foot stump to a 4.0-inch top d.o.b. or to a point prior to 4.0-inch d.o.b. because of branching, forking, or other factors.

Residual Dry Weight—Dry weight of woody biomass of the nonmerchantable portion of all growing-stock trees greater than or equal to 5.0-inches in d.b.h., all saplings, all noncommercial trees, all rough trees, and all rotten trees.

Total Dry Weight—Dry weight of woody biomass for all live woody vegetation greater than 1.0 inch in d.b.h. Included are growing-stock, commercial, noncommercial, rough, and rotten (sound portion) trees.

Woody Biomass—The amount of live organic material in woody vegetation. Included are bark and wood; excluded are fruits, leaves, stump, and roots.

Growth Classes

Gross Growth—Total increase in stand volume computed on growing-stock trees. Gross growth equals survivor growth plus ingrowth plus growth on removals plus growth on mortality plus cull increment.

Net Growth—Increase in stand volume, computed on growing-stock trees. Net growth is equal to gross growth minus mortality.

Net Change—Increase or decrease in stand volume, computed on growing-stock trees. Net change is equal to net growth minus removals.

Classes of Trees Used in Growth Computations

Survivor Trees—Merchantable-and-in at time 1 (previous inventory) and time 2 (current inventory).

Ingrowth Trees—Submerchantable-and-in at time 1 and merchantable-and-in at time 2.

Ongrowth Trees—Submerchantable-and-out at time 1 and merchantable-and-in at time 2; included with ingrowth component for growth computation.

Nongrowth Trees—Merchantable-and-out at time 1 and merchantable-and-in at time 2; included with survivor growth for growth computation.

Removal Trees—Merchantable-and-in at time 1 and removed prior to time 2.

Mortality Trees—Merchantable-and-in at time 1 and dead prior to time 2.

Ownership Classes

National Forest Land—Federal lands that have been legally designated as national forests or purchase units and other lands under the administration of the USDA Forest Service, including experimental areas.

Other Federal Land—Federal lands other than national forests; lands administered by the Bureau of Land Management and Indian Lands.

State, County, and Municipal Lands—Lands owned by States, counties, and local public agencies or municipalities, or lands leased to these governmental units for 50 years or more.

Forest Industry Land—Lands owned by companies or individuals operating wood-using plants (either primary or secondary).

Farmer Owned Land—Lands operated as a unit of 10 acres or more from which the sale of agricultural products totals $1,000 or more annually.

Nonindustrial Private Land (Individual)—Lands privately owned by individuals other than forest industry, farmer owned, or miscellaneous private corporation.

Nonindustrial Private Land (Corporate)—Lands privately owned by private corporations other than forest industry and incorporated farms.

Miscellaneous Definitions

Average Net Annual Growth—Average net annual volume increase for the intersurvey period.

Average Annual Mortality—Average annual sound-wood volume of growing-stock trees dying from natural causes.

Average Annual Removals—Average net annual volume of growing-stock trees removed from the inventory by harvesting, cultural operations (such as timber-stand improvement), land clearing, or changes in land use.

Basal Area—The area in square feet of the cross section at breast height of a single tree or of all the trees in a stand, usually expressed in square feet per acre.

Cull Increment—The change in growing-stock volume due to growing-stock, rough, or rotten trees changing tree class between time 1 and time 2.

D.b.h. (Diameter at Breast Height)—Tree diameter in inches, outside bark, usually measured at 4 1/2 feet above ground.

Diameter Classes—The 2-inch diameter classes extend from 1.0 inch below to 0.9 inches above the stated midpoint. Thus, the 12-inch class includes trees 11.0 inches through 12.9 inches in d.b.h.

Log Grades—A classification of logs based on external characteristics as indicators of quality or value.

Mortality—Number or sound-wood volume of live trees dying from natural causes during a specified period.

Natural Stands—Stands with no evidence of artificial regeneration. This includes those stands established by seed tree regeneration methods.

Plantations—Stands evidenced by regeneration from planting or seeding. Forest Inventory and Analysis categorizes plantations by forest type based upon plot tally.

Saw-Log Portion—The point on the bole of a sawtimber tree between a 1-foot stump and the saw-log top.

Saw-Log Top—The portion of the bole of a sawtimber tree above which a saw log cannot be produced. The minimum saw-log top is 7.0 inches in diameter outside bark (d.o.b.) for softwoods and 9.0 inches in d.o.b. for hardwoods.

Select Red Oaks—a group of select species in the red oak *(Erythrobalanus)* subgenus; may include one or more of the following species: cherrybark oak *(Quercus falcata* var. *pagodaefolia),* northern red oak *(Q. rubra),* or shumard oak *(Q.shumardii).* Other red oak species are included in the "other red oaks" group.

Select White Oaks—A group of select species in the white oak *(Leucobalanus)* subgenus; may include one or more of the following species: white oak *(Quercus alba),* swamp white oak *(Q. bicolor),* durand oak *(Q. durandii),* bur oak *(Q. macrocarpa),* swamp chestnut oak *(Q. michauxii),* or chinkapin oak *(Q. muehlenbergii).* Other white oak species are included in the "other white oaks" group.

Site Class—A classification of forest land in terms of potential capacity to grow crops of industrial wood.

Timber Removals—The net volume of growing-stock trees removed from the inventory by harvesting or cultural operations such as timber-stand improvement, land clearing, or change in land use.

Tree Grade—A log grade, assigned to the entire log portion of sawtimber trees, but based on the grade of the butt-log portion only. In past surveys, a log grade was assigned to each upper log based on log grade standards.

Upper-Stem Portion—That part of the main stem or fork of a sawtimber tree above the saw-log top to a diameter outside bark of 4.0 inches or to the point where the main stem or fork breaks into limbs.

Species List

Scientific and common names of tree species sampled in Mississippi[4]

Commercial Species

Scientific Name	**Common Name**
Softwoods	
Chamaecyparis thyoides	Atlantic white-cedar
Juniperus silicicola	southern redcedar
J. virginiana	eastern redcedar
Pinus echinata	shortleaf pine
P. elliottii	slash pine
P. glabra	spruce pine
P. palustris	longleaf pine
P. taeda	loblolly pine
Taxodium distichum var. *distichum*	baldcypress
T. distichum var. *nutans*	pondcypress
Hardwoods	
Acer barbatum	Florida maple
A. negundo	boxelder
A. rubrum var. *rubrum*	red maple
A. saccharinum	silver maple
A. saccharum	sugar maple
Aesculus glabra	Ohio buckeye
A. octandra	yellow buckeye
Betula nigra	river birch
Carya sp.	hickory
C. aquatica	water hickory

C. illinoensis	pecan
Castanea pumila	Allegheny chinkapin
Catalpa sp.	catalpa
Celtis laevigata	sugarberry
C. occidentalis	hackberry
Cornus florida	flowering dogwood
C. virginiana	common persimmon
Fagus grandifolia	American beech
Fraxinus americana	white ash
F. pennsylvanica	green ash
Gleditsia aquatica	water locust
G. triacanthos	honey locust
Halesia carolina	Mountain silverbell
Ilex opaca	American holly
Juglans nigra	black walnut
Liquidambar styraciflua	sweetgum
Liriodendron tulipifera	yellow-poplar
Maclura pomifera	Osage-orange
Magnolia acuminata	cucumbertree
M. grandiflora	southern magnolia
M. virginiana	sweetbay
Morus rubra	red mulberry
Nyssa aquatica	water tupelo
N. sylvatica var. *biflora*	swamp tupelo, blackgum
N. Sylvatica var. *sylvatica*	black tupelo (typical)
Persea borbonia	redbay
Platanus occidentalis	American sycamore
Populus sp.	cottonwood
Prunus serotina	black cherry
Quercus alba	white oak
Q. bicolor	swamp white oak
Q. coccinea	scarlet oak
Q. durandii	Durand oak
Q. falcata	southern red oak
Q. falcata var. *pagodifolia*	cherrybark oak
Q. laurifolia	laurel oak
Q lyrata	overcup oak
Q. michauxii	swamp chestnut oak
Q. muehlenbergii	chinkapin oak
Q. nigra	water oak
Q. nuttallii	Nuttall oak
Q. palustris	pin oak
Q. phellos	willow oak
Q. prinus	chestnut oak
Q. rubra	northern red oak
Q. shumardii	Shumard oak
Q. stellata var. *stellata*	post oak
Q. stellata var. *paludosa*	Delta post oak
Q. velutina	black oak
Robinia pseudoacacia	black locust
Salix sp.	willow
Sassafras albidum	sassafras
Tilia americana	American basswood
T. heterophylla	white basswood
Ulmus alata	winged elm
U. americana	American elm
U. crassifolia	cedar elm
U. pumila	Siberian oak
U. rubra	slippery elm
U. serotina	September elm

Noncommercial Species

Aesculus sp.	buckeye
Ailanthus altissima	ailanthus
Amelanchier sp.	serviceberry
Bumelia sp.	chittamwood
Carpinus caroliniana	American hornbeam
Castanopsis sp.	chinkapin
Cercis canadensis	eastern redbud
Crataegus sp.	hawthorn
Magnolia macrophylla	bigleaf magnolia
Malus sp.	apple
Morus alba	white mulberry
Ostrya virginiana	eastern hophornbeam
Oxydendrum arboreum	sourwood
Prunus sp.	plums
Quercus laevis	turkey oak
Q. marilandica	blackjack oak
Q. virginiana	live oak
Q. incana	bluejack oak
Vaccinium arboreum	sparkleberry
Melia azedarach	chinaberry
Planera aquatica	water-elm

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[1] Names according to: Little, Elbert L., Jr. 1979. Checklist of United States Trees (Native and Naturalized). U.S. Dept. Agr. Handbook No. 541, 375p.

Standard Tables

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Table 1—*Area by land classes, Mississippi, 1987*

Land class	Area
	Thousand acres
Forest	
Commercial	
Timberland	16,981.6
Deferred timberland	......
Noncommercial	
Productive-reserved	8.6
Unproductive	......
Total forest	16,990.1
Nonforest	
Cropland	7,745.1
Other	5,493.7
Total nonforest	13,238.8
All land[2]	30,228.9

[1] U.S. Department of Commerce, Bureau of the Census, 1982 Census of Agriculture, Volume 1: State and County data, issued 1984.

[2] Bureau of Census, 1981.

Table 2— *Area of timberland by ownership classes, Mississippi, 1987*[1]

Ownership class	Area
	Thousand acres
Public:	
National forest	1,212.1
Other federal	342.0
State	252.7
County	112.5
Total public	1,919.3
Private:	
Forest industry	3,197.3
Farmer	4,171.5
Miscellaneous private	
Individual	7,086.2
Corporate	607.2
Total private	15,062.3
All ownerships	16,981.6

[1] Columns may not sum to total due to rounding.

Table 3.— *Area of timberland by stand size and ownership classes, Mississippi, 1987*[1]

Stand size class	All ownerships	National forest	Other public	Forest industry	Farmer	Miscellaneous private
	Thousand acres					
Sawtimber	8,116.8	785.5	475.0	1,104.2	2,078.4	3,673.6
Poletimber stands	4,203.9	224.4	96.7	738.6	1,154.2	1,990.1
Sapling and seedling	4,458.8	189.4	108.8	1,304.5	880.8	1,975.2
Nonstocked areas	202.0	12.8	26.6	50.0	58.1	54.5
All classes	16,981.6	1,212.1	707.1	3,197.3	4,171.5	7,693.4

[1] Rows and columns may not sum to totals due to rounding.

Table 4.— *Area of timberland by stand volume and ownership classes, Mississippi, 1987*[1]

Stand volume per acre	All ownerships	National forest	Other public	Forest industry	Farmer	Miscellaneous private
Board feet[2]	*Thousand acres*					
Less than 1,500	6,005.7	189.5	149.0	1,616.8	1,441.6	2,608.7
1,500 to 5,000	5,206.7	281.3	176.7	789.1	1,317.4	2,642.2
More than 5,000	5,769.1	741.3	381.4	791.4	1,412.5	2,442.5
All classes	16,981.6	1,212.1	707.1	3,197.3	4,171.5	7,693.4

[1] Rows and columns may not sum to totals due to rounding.

[2] International 1/4-inch rule.

Table 5—*Area of timberland by percent growing-stock trees and cull trees, Mississippi, 1987*[1]

Growing-stock trees	Total	Cull trees *percent stocking* 0–10	10–20	20–30	30-40	40-50	50-60	60+
Percent stocking				*Thousand acres*				
0–10	94.6	27.9	5.5	.....	......	12.0	5.9	43.2
10–20	128.8	22.7	7.8	15.8	15.9	11.7	6.1	48.9
20–30	346.3	7.0	32.5	24.7	34.1	21.0	80.9	146.1
30–40	569.1	51.6	44.2	60.3	62.4	62.5	91.6	196.4
40–50	1,069.1	45.3	51.9	102.5	136.4	235.6	211.9	285.5
50–60	1,741.6	73.3	138.8	210.6	389.2	413.3	298.4	218.1
60–70	2,219.4	99.7	224.9	548.9	604.1	379.3	231.6	131.0
70–80	2,560.1	124.4	429.9	686.2	669.1	385.0	192.6	73.0
80–90	2,655.6	285.5	603.0	798.5	574.2	258.4	91.7	44.3
90–100	2,116.0	304.6	579.9	724.9	386.4	103.5	10.4	6.3
100–110	1,508.5	344.8	508.6	411.0	171.4	66.8	5.9	......
110–120	1,067.2	351.0	418.6	232.9	42.6	22.1	......	......
120–130	426.7	184.1	151.8	51.7	39.2	......	......	......
130–140	276.9	157.4	89.5	30.0	......	......	......	......
140–150	150.4	103.9	34.4	12.2	......	......	......	......
150–160	37.6	32.2	5.4	......	......	......	......	......
160+	13.5	13.5	......	......	......	......	......	......
Total	16,981.6	2,228.9	3,326.6	3,910.2	3,124.9	1,971.4	1,226.9	1,192.7

[1] Rows and columns may not sum to totals due to rounding.

Table 6—*Average basal area of live trees on timberland by ownership and timber classes, Mississippi, 1987*

Owner and timber classes	All species	Softwood Sapling & seedling	Softwood Poletimber	Softwood Sawtimber	Hardwood Sapling & seedling	Hardwood Poletimber	Hardwood Sawtimber
				Square feet per acre			
National forest:							
Growing stock	70.8	3.9	7.0	29.0	3.8	12.5	14.7
Rough and rotten	18.7	0.7	0.3	0.7	8.1	4.2	4.7
Total	89.5	4.5	7.3	29.7	11.9	16.7	19.3
Other public:							
Growing stock	67.5	1.7	4.3	18.5	4.2	13.4	25.3
Rough and rotten	22.8	0.4	0.4	0.7	6.9	6.3	8.1
Total	90.3	2.2	4.7	19.2	11.1	19.7	33.4
Forest industry:							
Growing stock	51.0	4.9	9.8	13.6	4.0	8.6	10.0
Rough and rotten	16.8	0.9	0.7	0.5	7.2	3.5	4.0
Total	67.8	5.9	10.5	14.1	11.2	12.1	14.1
Farmer:							
Growing stock	58.3	2.3	5.9	13.7	4.6	14.6	17.1
Rough and rotten	22.1	0.8	0.5	0.7	8.0	5.3	6.9
Total	80.4	3.1	6.4	14.4	12.6	19.8	24.0
Miscellaneous private:							
Growing stock	57.6	2.7	6.2	13.8	4.2	14.0	16.9
Rough and rotten	21.5	0.8	0.5	0.7	8.1	5.2	6.2
Total	79.1	3.5	6.7	14.5	12.3	19.2	23.0
All owners:							
Growing stock	57.9	3.1	6.8	15.0	4.2	13.0	15.8
Rough and rotten	20.6	0.8	0.5	0.6	7.8	4.9	5.9
Total	78.5	3.8	7.3	15.7	12.1	17.9	21.8

[1] Rows and columns may not sum to totals due to rounding.

Table 7.—*Area of timberland by site and ownership classes, Mississippi, 1987*[1]

[illegible]	All ownerships	National forest	Other public	Forest industry	Farmer	Miscellaneous private
	Thousand acres					
165 ft or more	2,458.9	171.1	151.1	355.0	653.5	1,128.1
120 to 165 ft	4,937.6	432.4	203.1	859.2	1,295.7	2,147.3
85 to 120 ft	6,785.5	465.8	227.3	1,363.0	1,552.6	3,176.7
50 to 85 ft	2,641.4	142.8	103.6	592.1	657.3	1,145.6
Less than 50 ft	158.2		22.0	28.0	12.3	95.8
All classes	16,981.6	1,212.1	707.1	3,197.3	4,171.5	7,693.4

[1] Rows and columns may not sum to totals due to rounding.

Table 8.—*Area of timberland by forest types and ownership classes, Mississippi, 1987*[1]

Type	All ownerships	National forest	Other public	Forest industry	Farmer	Miscellaneous private
	Thousand acres					
Longleaf-slash pine	841.5	186.5	47.1	256.4	87.9	263.6
Loblolly-shortleaf pine	3,930.7	307.4	124.7	1,058.7	887.5	1,552.4
Oak-pine	3,522.9	357.3	124.0	668.3	787.4	1,585.9
Oak-hickory	5,477.2	232.8	154.8	730.8	1,533.6	2,825.2
Oak-gum-cypress	3,051.7	121.5	237.0	465.6	820.3	1,407.4
Elm-ash-cottonwood	149.5	6.8	19.5	9.4	54.8	58.9
Nontyped	8.1	....	....	8.1	......	......
All types	16,981.6	1,212.1	707.1	3,197.3	4,171.5	7,693.4

[1] Rows and columns may not sum to totals due to rounding.

Table 9—*Area of noncommercial forest land by forest types, Mississippi, 1987*[1]

Type	All areas	Productive reserved areas	Unproductive areas
	Thousand acres		
Longleaf-slash pine	4.6	4.6	......
Softwood total	4.6	4.6	......
Oak-hickory	1.9	1.9	......
Oak-gum-cypress	2.1	2.1	......
Hardwood total	4.0	4.0	......
All types	8.6	8.6	.....

[1] Rows and columns may not sum to totals due to rounding.

Table 10—*Number of growing-stock trees on timberland by species and diameter classes, Mississippi, 1987*[1]

Species	All classes	5.0–6.9	7.0–8.9	9.0–10.9	11.0–12.9	13.0–14.9	15.0–16.9	17.0–18.9	19.0–20.9	21.0–28.9	29.0 & larger
	Diameter class (inches at breast height)										
	Thousand trees										
Longleaf pine	41,420	12,947	8,323	6,548	6,303	3,985	2,068	976	184	87	......
Slash pine	80,533	38,755	21,137	10,193	5,474	2,591	1,531	546	237	68	......
Shortleaf pine	171,244	51,705	47,841	31,886	21,496	10,532	5,072	1,926	528	258	......
Loblolly pine	412,775	149,887	102,417	57,599	39,866	28,410	16,362	9,052	4,861	4,206	114
Spruce pine	8,173	1,836	1,726	1,055	1,129	810	505	406	382	314	9
Redcedar[2]	13,859	8,344	3,212	1,266	520	305	140	59	12	......	......
Cypress	7,582	2,862	1,924	749	851	278	252	217	94	295	60
Total softwoods	735,587	266,336	186,581	109,296	75,639	46,911	25,931	13,183	6,299	5,228	183
Select white oaks[3]	71,967	25,672	15,356	10,276	7,039	5,360	3,568	2,147	1,104	1,398	46
Select red oaks[4]	33,571	8,654	7,504	4,361	3,667	2,912	2,539	1,443	916	1,398	176
Other white oaks	61,156	20,163	16,077	10,110	5,917	4,245	2,286	888	754	630	87
Other red oaks	201,420	65,345	44,544	34,427	20,080	14,645	9,414	5,440	3,339	3,749	435
Sweet pecan	2,879	967	353	662	302	124	147	82	55	146	39
Water hickory	5,107	1,478	1,376	689	339	393	286	202	153	188	4
Other hickories	50,820	18,117	10,253	8,123	6,201	3,875	2,095	1,110	588	445	12
Persimmon	5,716	3,368	1,289	845	149	21	14	20	10	......	......
Hard maple	1,571	858	311	183	101	68	26	13	11	......	......
Soft maple	29,498	18,136	6,460	2,503	1,451	515	175	161	66	30	......
Boxelder	5,857	1,984	1,124	1,439	658	394	156	71	15	16	......
Beech	6,989	2,144	1,261	886	434	611	596	427	201	402	27
Sweetgum	211,316	98,479	53,085	30,324	12,778	8,394	4,212	2,052	970	974	49
Blackgum	50,994	19,988	13,306	7,654	4,353	3,158	1,539	649	181	164	3
Other gums/tupelos	19,828	4,935	5,627	3,936	2,064	1,535	1,019	456	180	72	4
White ash	5,356	1,727	1,247	973	455	400	167	222	148	18	......
Other ashes	20,416	8,147	5,050	2,666	1,810	1,135	706	382	219	258	42
Sycamore	8,122	2,213	2,214	930	583	841	544	284	202	277	34
Cottonwood	3,054	263	915	390	213	214	181	208	190	296	184
Basswood	1,046	77	391	189	61	201	36	24	21	47	......
Yellow-poplar	30,359	9,498	6,625	3,924	3,299	2,678	1,814	1,130	504	805	82
Magnolia	2,814	1,103	661	415	252	107	106	76	62	28	4
Sweetbay	22,569	10,416	6,215	2,879	1,704	614	472	150	94	26	......
Willow	4,568	1,745	858	593	347	262	163	230	177	159	35
Black walnut	927	492	144	134	33	40	35	27	21	......	......
Black cherry	9,380	5,256	1,861	1,406	298	260	165	91	42	......	......
American elm	11,957	3,593	3,415	2,048	787	1,266	411	244	86	91	17
Other elms	19,419	9,655	4,555	2,820	983	782	306	106	104	107	......
River birch	2,571	512	583	464	322	334	185	89	47	34	......
Hackberry	20,520	5,570	5,566	3,789	2,025	1,526	860	661	323	192	8
Black locust	1,181	492	167	409	58	55	......	......	......	......	......
Other locusts	717	90	149	264	60	31	46	49	28	......	......
Sassafras	3,289	1,498	865	432	106	249	47	39	30	21	......
Dogwood	8,248	7,493	740	......	......	......	15	......	......	......	......
Holly	2,931	11,602	873	217	177	47	15	......	......	......	......
Other commercial	1,555	904	489	162	......	......	......	......	......	......	......
Total hardwoods	939,687	362,635	221,512	141,523	79,108	57,291	34,346	19,173	10,840	11,970	1,287
All species	1,675,273	628,971	408,093	250,819	154,746	104,202	60,277	32,356	17,139	17,199	1,471

[1] Rows and columns may not sum to totals due to rounding.

[2] Includes a small amount of Atlantic white-cedar.

[3] Includes white, swamp chestnut, and bur oaks.

[4] Includes cherrybark and Shumard oaks.

Table 11—*Volume of timber on timberland by classes of timber and by softwoods and hardwoods, Mississippi, 1987*[1]

Class of timber	All species	Softwood	Hardwood
	Million cubic feet		
Sawtimber trees:			
Saw-log portion	11,987.7	6,423.6	5,564.1
Upper-stem portion	1,851.0	785.3	1,065.7
Total	13,838.7	7,208.9	6,629.8
Poletimber trees	5,586.8	1,877.9	3,708.9
All growing stock	19,425.5	9,086.8	10,338.7
Rough trees	2,459.6	310.0	2,149.5
Rotten trees	412.2	14.1	398.1
Salvable dead trees	199.6	139.5	60.1
All timber	22,496.8	9,550.4	12,946.4

[1] Rows and columns may not sum to totals due to rounding.

Table 12.—*Volume of growing stock and sawtimber on timberland by ownership classes and by softwoods and hardwoods, Mississippi, 1987*[1]

Ownership class	Growing stock			Sawtimber		
	All species	Softwood	Hardwood	All species	Softwood	Hardwood
	Million cubic feet			*Million board feet*[2]		
National forest	1,994.8	1,298.5	696.2	9,082.0	6,791.2	2,290.8
Other public	1,069.6	446.2	623.4	4,634.3	2,238.7	2,395.6
Forest industry	2,952.3	1,671.2	1,281.1	10,576.5	6,379.6	4,197.0
Farmer	4,702.1	1,978.7	2,723.3	16,972.3	8,426.9	8,545.3
Miscellaneous private	8,706.8	3,692.1	5,014.7	31,944.8	15,760.7	16,184.1
All ownerships	19,425.5	9,086.8	10,338.7	73,209.9	39,597.1	33,612.8

[1] Rows and columns may not sum to totals due to rounding.
[2] International 1/4-inch rule.

Table 13—*Volume of growing stock on timberland by species and diameter classes, Mississippi, 1987*[1]

	Diameter class (inches at breast height)										
Species	All classes	5.0–6.9	7.0–8.9	9.0–10.9	11.0–12.9	13.0–14.9	15.0–16.9	17.0–18.9	19.0–20.9	21.0–28.9	29.0 & larger
	Million cubic feet										
Longleaf	604.5	37.2	57.9	90.9	141.2	123.4	85.4	49.9	11.5	6.9	......
Slash pine	671.0	93.0	134.0	127.5	112.2	83.2	65.9	32.0	16.3	6.9	......
Shortleaf pine	2,100.9	153.8	345.8	439.4	449.6	327.7	215.1	105.7	38.6	25.2	......
Loblolly pine	5,347.0	365.9	622.6	723.6	802.7	854.8	678.1	501.3	343.9	432.1	21.9
Spruce pine	189.5	5.8	11.0	12.3	22.5	26.8	22.0	25.2	28.0	34.2	1.6
Redcedar[2]	65.4	17.1	17.0	11.3	7.2	6.0	4.1	2.2	0.5	......	......
Cypress	108.5	5.5	11.3	10.0	16.7	8.1	8.9	10.5	4.8	24.3	8.3
Total softwoods	9,086.8	678.4	1,199.5	1,415.1	1,552.2	1,430.0	1,079.5	726.7	443.7	529.8	31.8
Select white oaks[3]	939.8	67.1	95.9	116.1	126.6	139.3	126.5	94.0	61.8	104.6	7.9
Select red oaks[4]	616.6	23.4	45.3	47.4	67.4	76.6	88.4	68.9	52.9	117.7	28.7
Other white oaks	593.8	45.9	82.5	96.3	88.6	90.3	63.6	34.2	34.4	45.6	12.3
Other red oaks	2,577.1	173.5	265.5	367.5	341.0	352.8	307.4	232.6	182.8	289.3	64.7
Sweet pecan	51.9	2.0	2.1	6.7	5.7	3.1	5.3	3.6	4.0	13.1	6.4
Water hickory	74.8	4.6	7.5	6.7	4.8	9.4	9.6	8.7	8.2	14.6	0.7
Other hickories	588.8	41.6	57.8	85.8	107.0	99.7	74.5	51.0	34.2	36.4	0.9
Persimmon	32.9	9.1	7.8	10.9	2.6	0.5	0.5	1.0	0.6	......	......
Hard maple	11.8	2.5	1.8	2.2	2.1	1.5	0.8	0.4	0.6	......	......
Soft maple	158.2	45.1	36.9	24.6	22.8	12.0	4.9	6.4	3.2	2.4	......
Boxelder	55.5	5.1	6.9	14.6	10.9	8.8	5.3	2.5	0.6	0.8	......
Beech	129.9	5.2	6.6	9.7	6.8	15.3	20.1	19.4	11.4	31.1	4.3
Sweetgum	1,771.0	220.7	310.4	336.7	240.2	230.8	163.3	106.1	64.5	90.7	7.6
Blackgum	448.1	44.7	72.2	81.4	73.1	76.4	52.0	26.2	10.1	11.7	0.3
Other gums/tupelos	226.6	13.0	32.5	43.4	36.1	37.2	31.0	19.2	9.3	4.5	0.4
White ash	68.8	4.9	8.4	9.8	8.0	10.5	6.3	10.7	8.5	1.7	......
Other ashes	210.2	21.1	30.3	29.5	30.6	26.9	23.1	15.3	11.2	17.2	5.2
Sycamore	153.2	7.8	16.3	14.0	11.7	24.5	21.0	14.7	13.0	25.5	4.7
Cottonwood	126.6	0.7	6.2	4.3	4.0	5.0	7.3	11.4	12.7	34.1	40.8
Basswood	19.9	0.3	2.5	2.0	1.5	5.5	1.3	1.2	1.1	4.5	......
Yellow-poplar	502.0	25.9	43.1	47.0	61.9	74.5	72.6	56.9	32.9	72.5	14.7
Magnolia	29.8	2.7	3.9	4.1	4.2	2.3	3.9	3.2	3.0	1.9	0.5
Sweetbay	171.1	29.6	39.9	31.7	28.4	14.5	15.2	5.8	4.5	1.6	......
Willow	76.6	3.8	4.6	5.5	5.6	7.0	6.6	12.8	11.4	14.7	4.5
Black walnut	7.2	0.7	0.5	1.4	0.5	1.1	1.1	1.1	0.8	.....	......
Black cherry	63.4	13.2	10.5	15.3	5.4	7.0	6.0	4.0	2.0	......	......
American elm	130.1	9.3	19.6	22.3	14.2	29.9	13.3	9.9	4.0	5.6	2.0
Other elms	146.4	21.8	26.2	31.1	17.0	19.6	10.2	4.9	5.9	9.8	......
River birch	39.3	1.9	3.4	5.2	5.7	8.3	6.3	3.8	2.5	2.2	......
Hackberry	233.3	14.1	31.6	39.7	32.6	33.7	24.6	27.5	16.1	12.4	0.9
Black locust	9.2	1.9	1.3	3.9	1.0	1.2	......	......	......	......	......
Other locusts	11.2	0.5	0.9	2.9	1.3	0.6	1.3	2.2	1.5	......	......
Sassafras	27.7	3.0	5.5	4.4	1.8	6.0	1.5	1.9	1.8	1.7	......
Dogwood	16.6	13.7	2.7	......	......	......	0.3	......	......	......	......
Holly	13.2	3.5	4.1	1.8	2.4	0.8	0.6	......	.....	......	......
Other commercial	6.0	2.5	2.0	1.5	......	......	......	......	......	......	......
Total hardwoods	10,338.7	886.1	1,295.6	1,527.2	1,373.8	1,432.7	1,175.4	861.5	611.4	967.9	207.1
All species	19,425.5	1,564.4	2,495.2	2,942.3	2,926.0	2,862.8	2,254.9	1,588.3	1,055.1	1,497.7	238.9

[1] Rows and columns may not sum to totals due to rounding.
[2] Includes a small amount of Atlantic white-cedar.
[3] Includes white, swamp chestnut, and bur oaks.
[4] Includes cherrybark and Shumard oaks.

Table 14—*Volume of sawtimber on timberland by species and diameter classes, Mississippi, 1987*[1]

	Diameter class (inches at breast height)								
Species	All classes	9.0–10.9	11.0–12.9	13.0–14.9	15.0–16.9	17.0–18.9	19.0–20.9	21.0–28.9	29.0 & larger
	Million board feet[2]								
Longleaf pine	2,716.1	404.7	752.9	684.9	485.1	280.8	67.6	40.1	......
Slash pine	2,306.8	513.5	576.6	488.6	392.9	192.3	98.2	44.6	......
Shortleaf pine	8,711.5	2,017.1	2,434.0	1,914.4	1,297.0	644.1	244.1	160.8	......
Loblolly pine	24,248.4	3,117.9	4,229.9	4,882.1	4,008.5	3,027.0	2,128.7	2,713.9	140.5
Spruce pine	1,004.5	52.5	115.2	153.0	131.2	154.7	173.3	214.5	10.0
Redcedar	138.7	44.4	29.9	28.5	22.1	11.2	2.6	.....	......
Cypress	471.2	37.0	74.6	43.9	45.3	57.8	26.1	135.3	51.3
Total softwoods	39,597.1	6,187.0	8,213.1	8,195.4	6,382.1	4,367.9	2,740.5	3,309.2	201.8
Select white oaks[4]	3,469.2	......	523.5	694.8	677.7	532.3	357.5	632.8	50.6
Select red oaks[5]	2,670.4	......	263.0	388.2	466.9	378.9	304.8	700.5	168.2
Other white oaks	1,861.9	......	365.7	445.4	336.9	184.5	186.6	267.1	75.7
Other red oaks	8,956.9	......	1,336.5	1,703.4	1,606.5	1,247.5	1,014.0	1,658.6	390.5
Sweet pecan	229.6	......	25.2	15.1	26.8	20.3	24.5	76.5	41.2
Water hickory	294.0	......	18.5	43.7	49.5	49.4	44.4	84.7	3.8
Other hickories	2,040.9	......	446.1	497.8	394.9	288.3	192.8	215.1	6.0
Persimmon	23.1	......	9.4	2.7	1.6	6.0	3.4	......	......
Hard maple	28.1	......	11.1	6.9	4.8	2.0	3.2	......	......
Soft maple	227.2	......	89.9	55.2	22.2	32.0	15.8	12.1	......
Boxelder	133.1	......	45.3	43.7	24.6	12.4	3.7	3.4	......
Beech	597.5	......	29.3	76.3	107.8	106.1	65.9	190.5	21.5
Sweetgum	4,429.1	......	919.0	1,108.1	878.7	581.6	374.2	527.9	39.6
Blackgum	1,188.3	......	290.9	363.1	275.5	134.3	55.0	68.1	1.4
Other gums/tupelos	596.3	......	123.3	151.8	150.0	98.5	47.1	23.9	1.8
White ash	232.8	......	34.7	50.4	33.8	56.3	48.4	9.2	......
Other ashes	603.8	......	118.3	119.2	117.6	80.4	59.1	82.9	26.2
Sycamore	598.4	......	46.7	118.0	110.8	77.0	72.9	144.2	28.8
Cottonwood	685.1	......	13.8	23.7	41.6	62.8	75.4	211.6	256.2
Basswood	81.4	......	6.9	27.9	6.1	8.1	6.4	26.0	......
Yellow-poplar	2,023.1	......	247.9	371.5	391.5	316.4	188.4	424.3	83.1
Magnolia	98.5	......	17.1	10.8	22.0	18.6	16.5	11.2	2.2
Sweetbay	325.9	......	115.3	68.2	77.0	32.6	24.1	8.7	......
Willow	365.5	......	22.9	37.9	37.1	80.9	69.3	91.5	26.0
Black walnut	22.8	......	2.0	4.8	5.8	5.6	4.6	......	......
Black cherry	122.9	......	21.4	36.7	32.4	22.8	9.6	......	......
American elm	393.2	......	62.2	144.6	68.2	52.5	22.6	31.8	11.1
Other elms	339.0	......	69.6	98.4	55.3	25.9	33.2	56.6	......
River birch	143.3	......	25.7	40.9	31.8	19.2	13.7	12.1	......
Hackberry	694.3	......	123.6	148.6	119.9	146.6	87.9	64.5	3.2
Black locust	9.4	......	3.5	5.9	......	......	......	......	......
Other locusts	34.8	......	4.7	2.8	6.7	11.7	8.9	......	......
Sassafras	75.1	......	6.8	29.6	6.6	11.3	10.6	10.2	......
Dogwood	1.5	......	......	......	1.5	......	......	......	......
Holly	16.5	......	9.1	4.1	3.3	......	......	......	......
Total hardwoods	33,612.8	......	5,448.7	6,940.0	6,193.7	4,702.5	3,444.4	5,646.1	1,237.2
All species	73,209.9	6,187.0	13,661.9	15,135.4	12,575.9	9,070.4	6,185.0	8,955.4	1,439.0

[1] Rows and columns may not sum to totals due to rounding.

[2] International 1/4-inch rule.

[3] Includes a small amount of Atlantic white-cedar.

[4] Includes white, swamp chestnut, and bur oaks.

[5] Includes cherrybark and Shumard oaks.

Table 15—*Volume of sawtimber on timberland by species and tree grades, Mississippi, 1987*[1]

Species	All grades	Grade 1	Grade 2	Grade 3	Grade 4
	Million board feet[2]				
Yellow pines	38,987.2	5,889.1	6,701.2	26,397.0	......
Cypress	471.2	72.6	114.4	284.1	......
Redcedar	136.4	136.4	......	......	......
Other softwoods	2.3	2.3	......	......	......
Total softwoods	39,597.1	6,100.4	6,815.6	26,681.1	......
Select white-red oaks[3]	6,139.6	763.1	1,601.4	2,695.3	1,079.8
Other white-red oaks	10,818.7	403.1	1,632.0	4,731.0	4,052.6
Hickory	2,564.5	171.2	485.1	1,444.6	463.5
Hard maple	28.1	......	......	12.8	15.3
Sweetgum	4,429.1	375.4	888.5	2,256.0	909.1
Tupelo and blackgum	1,784.6	105.6	514.3	1,000.6	164.2
Ash-walnut-black cherry	982.3	168.6	275.0	471.6	67.1
Yellow-poplar	2,023.1	240.2	422.6	915.0	445.3
Other hardwoods	4,842.8	663.6	965.2	1,899.4	1,314.6
Total hardwoods	33,612.8	2,890.9	6,784.2	15,426.4	8,511.3
All species	73,209.9	8,991.3	13,599.8	42,107.5	8,511.3

[1] Rows and columns may not sum to totals due to rounding.

[2] International 1/4-inch rule.

[3] Includes white, swamp chestnut, cherrybark, and Shumard oaks.

Table 16—*Average net annual growth and average annual removals of growing stock on timberland by species, Mississippi, 1977–1987*[1]

Species	Growth	Removals
	Million cubic feet	
Yellow pines	504.3	514.9
Cypress	1.7	4.2
Redcedar	3.4	1.2
Total softwoods	509.1	520.4
Select white-red oaks[2]	75.1	42.8
Other white-red oaks	147.6	85.3
Hickory	25.4	15.7
Hard maple	0.6	0.2
Sweetgum	73.1	38.7
Tupelo and blackgum	16.7	11.9
Ash-walnut-black cherry	14.4	5.7
Yellow-poplar	28.4	13.7
Other hardwoods	55.1	26.9
Total hardwoods	436.3	240.8
All species	945.4	761.2

[1] Columns may not sum to totals due to rounding.

[2] Includes white, swamp chestnut, bur, cherrybark, and Shumard oaks.

Table 17.—*Average net annual growth and average annual removals of growing stock on timberland by ownership classes and by softwoods and hardwoods, Mississippi, 1977-1987*[1]

	Net annual growth			Annual removals		
Ownership class	All species	Softwood	Hardwood	All species	Softwood	Hardwood
	Million cubic feet					
National forest	67.7	43.8	23.9	55.9	50.8	5.1
Other public	28.1	13.4	14.8	15.8	6.9	8.9
Forest industry	183.9	124.1	59.8	223.2	156.0	67.2
Farmer	233.5	115.4	118.1	168.5	108.2	60.3
Miscellaneous private	432.2	212.4	219.8	297.9	198.5	99.4
All ownerships	945.4	509.1	436.3	761.2	520.4	240.8

[1] Rows and columns may not sum to totals due to rounding.

Table 18—*Average net annual growth and average annual removals of sawtimber on timberland by species, Mississippi, 1977–1987*[1]

Species	Growth	Removals
	Million board feet[2]	
Yellow pines	2,510.1	2,125.8
Cypress	6.2	17.9
Redcedar	7.2	2.9
Total softwoods	2,522.7	2,146.6
Select white-red oaks[3]	341.7	168.5
Other white-red oaks	606.4	294.9
Hickory	101.3	59.5
Hard maple	1.2	0.6
Sweetgum	203.4	88.0
Tupelo and blackgum	49.2	36.3
Ash-walnut-black cherry	46.7	12.8
Yellow-poplar	125.8	60.5
Other hardwoods	190.6	92.2
Total hardwoods	1,666.3	813.3
All species	4,189.0	2,959.9

[1] Columns may not sum to totals due to rounding.
[2] International 1/4-inch rule.
[3] Includes white, swamp chestnut, cherrybark, and Shumard oaks.

Table 19.—*Average net annual growth and average annual removals of sawtimber on timberland by ownership classes and by softwoods and hardwoods, Mississippi, 1977-1987*[1]

	Net annual growth			Annual removals		
Ownership class	All species	Softwood	Hardwood	All species	Softwood	Hardwood
	Million board feet[2]					
National forest	321.8	243.3	78.5	271.0	256.5	14.5
Other public	160.6	87.6	73.0	64.9	32.7	32.2
Forest industry	740.1	525.8	214.3	836.8	605.1	231.7
Farmer	1,041.0	596.3	444.7	646.3	436.3	210.0
Miscellaneous private	1,925.4	1,069.7	855.7	1,140.9	816.0	324.9
All ownerships	4,189.0	2,522.7	1,666.3	2,959.9	2,146.6	813.3

[1] Rows and columns may not sum to totals due to rounding.
[2] International 1/4-inch rule.

Table 20—*Average annual mortality of growing stock and sawtimber on timberland by species, Mississippi, 1977-1987*[1]

Species	Growing stock	Sawtimber
	Million cubic feet	*Million board feet*[2]
Yellow pines	91.1	270.7
Cypress	0.5	1.1
Redcedar	0.7	1.3
Other softwoods	0.8	0.9
Total softwoods	93.1	273.9
Select white-red oaks[3]	6.6	18.0
Other white-red oaks	22.5	58.3
Hickory	5.0	21.5
Sweetgum	12.8	32.9
Tupelo and blackgum	3.0	9.4
Ash-walnut-black cherry	3.0	6.7
Yellow-poplar	1.2	5.7
Other hardwoods	22.6	67.0
Total hardwoods	76.7	219.5
All species	169.8	493.4

[1] Columns may not sum to totals due to rounding.
[2] International 1/4-inch rule.
[3] Includes white, swamp chestnut, bur, cherrybark, and Shumard oaks.

Table 21.—*Average annual mortality of growing stock and sawtimber on timberland by ownership classes and by softwoods and hardwoods, Mississippi, 1977-1987*[1]

	Growing stock			Sawtimber		
Ownership class	All species	Softwood	Hardwood	All species	Softwood	Hardwood
	-------------- *Million cubic feet* --------------			-------------- *Million board feet*[2] --------------		
National forest	18.7	12.9	5.8	76.8	58.5	18.3
Other public	12.2	4.8	7.4	43.4	18.0	25.4
Forest industry	27.2	16.2	11.1	71.4	36.1	35.4
Farmer	41.3	21.8	19.6	107.1	59.2	48.0
Miscellaneous private	70.4	37.4	33.0	194.6	102.2	92.4
All ownerships	169.8	93.1	76.7	493.4	273.9	219.5

[1] Rows and columns may not sum to totals due to rounding.
[2] International 1/4-inch rule.

Table 22.—*Average annual mortality of growing stock and sawtimber on timberland by causes of death and by softwoods and hardwoods, Mississippi, 1977-87*[1]

	Growing stock			Sawtimber		
Ownership class	All species	Softwood	Hardwood	All species	Softwood	Hardwood
	-------------- *Million cubic feet* --------------			-------------- *Million board feet*[2] --------------		
Bark beetles	25.4	25.4	......	99.8	99.8	......
Other insects	0.2	0.2	......	0.5	0.5	......
Disease	88.8	39.3	49.5	249.0	108.6	140.5
Fire	2.8	1.4	1.4	4.9	3.2	1.7
Beaver	3.6	0.2	3.4	10.6	0.7	9.9
Other animals	0.2	0.1	0.1	0.7	0.7	......
Weather	24.9	10.7	14.1	92.4	39.4	53.0
Hurricane	1.3	0.6	0.7	5.0	3.1	2.0
Suppression	12.9	9.9	3.1	4.8	4.4	0.4
Other	9.7	5.3	4.4	25.6	13.6	12.0
All causes	169.8	93.1	76.7	493.4	273.9	219.5

[1] Rows and columns may not sum to totals due to rounding.
[2] International 1/4-inch rule.

Kelly, John F.; Sims, Mike. 1989. Forest resources of Mississippi. Resour. Bull. SO-147. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 63p.

The principal findings of the sixth forest survey of Mississippi (1987) and changes that have occurred since earlier surveys are presented in this report. Topics examined include the status and trends in forest area, timber volume, growth, removals, mortality, and timber product output.

Keywords: Biomass, forest inventory, timberland, timber supply, volume.

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Forest Statistics for Tennessee Counties — 1989

John S. Vissage and K. L. Duncan

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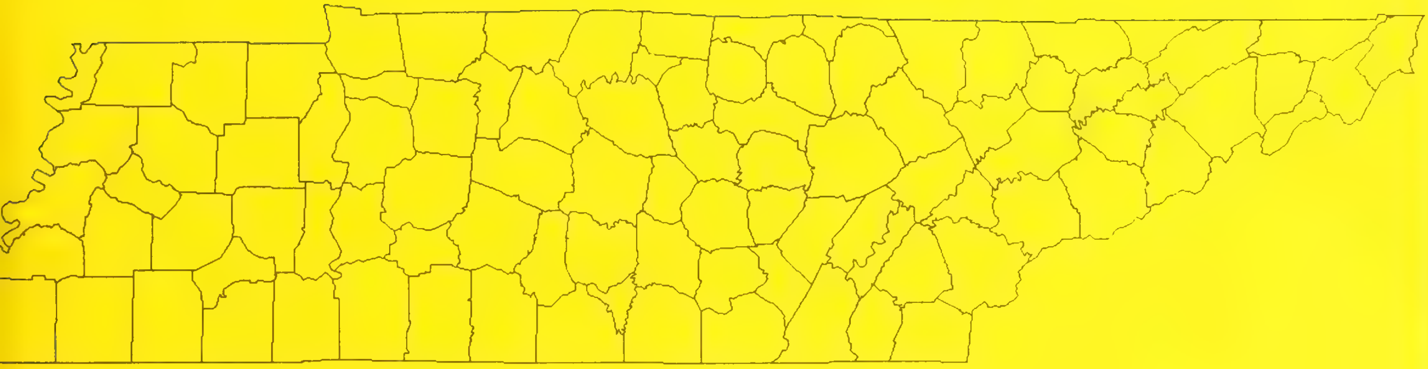

FOREWORD

The Southern Forest Survey, an activity of the Southern Forest Experiment Station Forest Inventory and Analysis work unit, covers the States of Alabama, Arkansas, Louisiana, Mississippi, Oklahoma, Tennessee, and Texas, and the island of Puerto Rico.

This survey is part of the nationwide Forest Survey originally authorized by the McSweeney-McNary Act of 1928. More recent legislation pertinent to the survey mission includes the Forest and Rangeland Renewable Resources Planning Act of 1974 and the Forest and Rangeland Renewable Resources Research Act of 1978. The survey mission is to develop, analyze, and maintain renewable forest resource information. This information is essential for formulation of forest policies and programs.

ACKNOWLEDGMENTS

The Southern Station gratefully acknowledges the cooperation and assistance provided by the Tennessee Division of Forestry and forest industries in collecting field data. Appreciation is also expressed for the cooperation of other public agencies and private landowners in providing access to the sample locations.

February 1990

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*Core tables are presented in response to the Southern Industrial Forestry Research Council's recommendations. These tables are identical among Forest Inventory and Analysis units in the eastern United States.

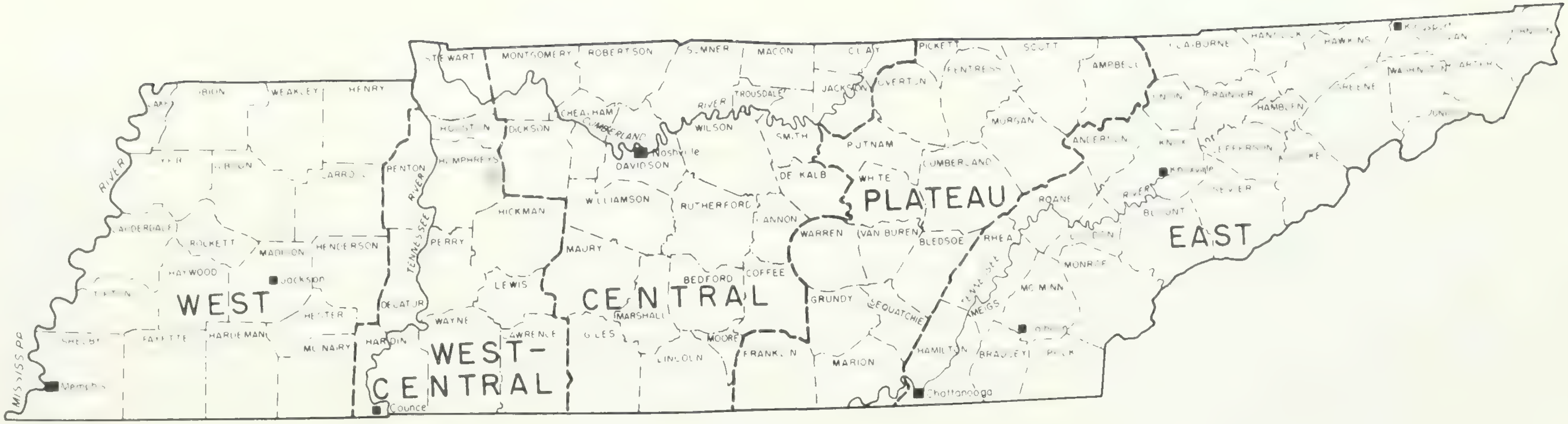

Figure I.-- *The forest survey regions of Tennessee.*

Forest Statistics for Tennessee Counties — 1989

John S. Vissage and K. L. Duncan

INTRODUCTION

The tables and figures in this report were derived from data obtained during a recent inventory of the five survey regions and 95 counties in the State of Tennessee (fig. I). Data on forest acreage and timber volume were secured by a three-step process. A forest-nonforest classification using aerial photographs was accomplished with each grid representing approximately 230 acres. These photo classifications were adjusted based on ground observations at sample locations each representing approximately 3,840 acres. Finally, field measurements were made at forest locations on the intersections of grid lines spaced 3 miles apart. At these forest locations, per-acre estimates were obtained from trees measured on ten 37.5 basal area factor prism points.

The sampling methods are designed to achieve suitable sampling errors for estimates of area and volume at the State level. Sampling error increases as the area or volume considered decreases. The sampling errors presented in table I, equal to one standard deviation for the sample data, may be used to construct confidence intervals for population estimates. For example, at the 95 percent confidence level, the confidence interval for growing-stock volume (in million cubic feet) in the State of Tennessee (with a sampling error of 2.3 percent) is

$$16{,}682.7 \pm 1.96\ (0.023 \times 16{,}682.7) = 16{,}682.7 \pm 752.1$$

where 1.96 is the number of standard deviations. This confidence interval indicates that the actual growing-stock volume lies in the range 15,930.6 to 17,434.8 million cubic feet, unless a 1 in 20 chance has occurred.

Sampling errors for sub-groups of counties in the unit may be estimated by the following formula:

$$SE_g = \frac{SE_t \sqrt{X_t}}{\sqrt{X_g}}$$

where:

SE = standard error of estimate (expressed as a percent)
X = variable of interest (area or volume)
g = group of counties to be combined
t = total for the State.

For example, the sampling error estimate of growing-stock volume for McNairy, Hardin, Wayne, and Lawrence counties is 9.4 percent. Thus, the 95 percent confidence interval for growing-stock volume is 998 ± 184.0 million cubic feet.

Ownership information is obtained by the same systematic sample outlined above. County courthouse records are used to obtain ownership information for each forested plot. An expansion factor representing timberland area in that county is then applied to the ownership group the plot represents. Next, the ownership groups are totaled for each county. Thus, acreages reported at the county level are estimates and may not exactly match known totals for each ownership category within that county.

In order to achieve greater compatibility among Forest Inventory and Analysis (FIA) projects, a new tree grading classification has been in effect since the 1988 Arkansas survey. Tree grade 5 is used for trees currently or prospectively capable of producing at least one 12-foot log or two 8-foot logs in the saw-log portion but not able to produce a 12-foot log in the butt 16 feet. These trees, formerly classed as rough or rotten, are now included as growing stock. Table II shows the impact of this change on volume and growth at the State level.

Tables 1-25 are developed to provide compatibility among Forest Inventory and Analysis Projects. Tables 26-47 are supplementary tables and may change from unit to unit or State to State to address specific resource issues. Figures 4-11 illustrate forest-type groupings from Table 41.

DEFINITION OF TERMS

Average net annual growth. — Average net annual volume increase for the inter-survey period.

Average annual mortality. — Average annual sound-wood volume of growing-stock trees dying from natural causes.

Average annual removals. — Average net annual volume of growing-stock trees removed from the inventory by harvesting, cultural operations (such as timber-stand improvement), land clearing, or changes in land use.

Commercial species. — Tree species which normally develop into trees suitable for industrial wood products.

Forest land. — Land at least 16.7 percent stocked by forest trees of any size, or formerly having such tree cover, and not currently developed for nonforest use.

Forest type. — A classification of forest land based upon the species forming a plurality of live-tree stocking.

Growing-stock trees. — Live trees of commercial species. Rough and rotten trees are excluded.

Growing-stock volume. — The cubic-foot volume of sound wood in growing-stock trees at least 5.0 inches in diameter at breast height, from a l-foot stump to a minimum 4.0-inch top diameter outside bark of the central stem, or to the point where the central stem breaks into limbs.

Live trees. — Commercial and noncommercial tree species of sapling size or larger.

Natural stands. — Stands with no evidence of artificial regeneration. This includes those established by seed tree regeneration methods.

Table I—*Sampling errors*[1] *for timberland, growing stock, and sawtimber, Tennessee Counties, 1989*

County	Timberland	Growing stock Volume	Growing stock Growth	Growing stock Removals	Sawtimber volume
	Percent				
Anderson	5.1	14.4	17.2	48.4	18.6
Bedford	2.9	32.8	17.8	39.5	38.6
Benton	2.9	13.5	19.5	37.0	18.3
Bledsoe	3.3	14.2	12.6	29.7	20.3
Blount	2.7	12.3	38.4	...	15.3
Bradley	5.1	31.6	16.0	36.8	39.4
Campbell	2.2	9.2	11.7	36.1	10.4
Cannon	4.8	20.4	25.4	36.1	27.8
Carroll	1.8	14.4	9.6	46.7	21.7
Carter	2.3	10.8	37.7	21.5	13.5
Cheatam	3.7	15.6	9.2	38.3	21.1
Chester	1.7	15.5	26.1	33.2	20.8
Claiborne	3.1	15.1	20.6	17.4	18.9
Clay	1.8	12.2	23.0	28.9	15.9
Cocke	2.8	12.2	24.2	36.1	15.1
Coffee	2.0	10.7	17.6	25.0	12.8
Crockett	2.7	41.5	...	...	44.2
Cumberland	1.3	9.6	9.5	20.4	12.3
Davidson	2.9	23.7	21.7	23.7	29.6
Decatur	3.4	10.9	12.5	28.4	14.2
De Kalb	3.1	20.2	11.9	(2)	24.7
Dickson	2.3	16.2	17.5	33.0	18.6
Dyer	1.8	35.2	(2)	...	32.9
Fayette	1.8	21.1	18.1	32.0	27.5
Fentress	2.4	11.3	13.1	25.4	14.5
Franklin	1.8	12.2	20.7	25.0	17.3
Gibson	2.0	22.3	(2)	(2)	16.2
Giles	2.6	15.1	15.2	19.8	21.5
Grainger	2.5	22.3	16.7	42.3	29.2
Greene	1.9	14.7	16.1	39.2	17.8
Grundy	2.7	17.9	12.5	22.6	21.9
Hamblen	3.3	32.5	(2)	...	36.7
Hamilton	3.0	12.2	15.1	(2)	14.5
Hancock	4.0	36.0	41.1	(2)	40.4
Hardeman	1.7	14.1	15.1	34.7	18.3
Hardin	2.5	14.5	11.2	29.0	21.0
Hawkins	2.1	16.0	25.4	...	19.2
Haywood	1.8	16.3	(2)	16.8	19.9
Henderson	2.7	14.8	19.9	35.3	17.8
Henry	2.1	16.0	24.3	33.8	18.6
Hickman	1.7	8.3	13.6	17.6	11.4
Houston	1.9	16.4	13.9	...	21.5
Humphreys	2.7	10.2	16.3	33.7	13.4
Jackson	3.6	22.4	15.3	35.0	27.6
Jefferson	1.7	26.9	29.9	...	28.6
Johnson	1.5	18.3	23.0	32.5	21.9
Knox	2.8	23.2	28.5	3.7	26.8
Lake	1.6	...	...	(2)	...
Lauderdale	1.2	33.6	47.2	31.2	22.4
Lawrence	1.6	15.0	13.3	21.6	19.4
Lewis	2.8	12.9	13.2	30.8	19.2
Lincoln	2.5	18.1	14.7	26.4	23.7
Loudon	4.5	27.1	21.6	32.2	31.7
McMinn	3.1	16.6	21.4	3.3	21.6
McNairy	2.5	15.1	10.7	27.4	18.3
Macon	3.1	16.6	18.8	49.1	18.4
Madison	2.3	12.9	14.1	(2)	15.4
Marion	2.0	11.0	13.5	21.2	13.7
Marshall	2.4	28.0	25.7	35.6	38.5
Maury	2.4	17.8	20.0	47.3	28.3
Meigs	2.0	16.2	19.5	...	20.1
Monroe	1.8	11.8	13.2	26.6	13.9
Montgomery	2.2	12.1	15.7	(2)	14.4
Moore	2.7	32.9	23.7	...	44.7
Morgan	1.8	13.3	8.5	23.3	15.4
Obion	2.0	17.8	20.6	27.7	19.5
Overton	2.6	9.0	12.0	47.2	10.7
Perry	1.1	9.4	12.9	18.2	10.1
Pickett	4.5	28.8	31.2	...	38.2
Polk	2.4	13.3	27.1	23.2	16.6

Table I—*Sampling errors*[1] *for timberland, growing stock, and sawtimber, Tennessee Counties, 1989 - Continued*

County	Timberland	Growing stock Volume	Growing stock Growth	Growing stock Removals	Sawtimber volume
	Percent				
Putnam	3.0	19.9	12.6	27.6	25.8
Rhea	2.3	14.2	17.9	44.0	18.1
Roane	1.9	9.8	18.0	24.0	13.5
Robertson	2.6	16.1	11.8	41.2	16.6
Rutherford	3.2	20.1	20.6	...	25.7
Scott	2.3	7.0	12.6	21.2	9.1
Sequatchie	2.6	21.2	19.9	37.4	31.5
Sevier	1.8	15.3	18.3	7.0	19.4
Shelby	1.3	15.8	17.0	...	20.5
Smith	4.0	45.6	35.0	15.3	(2)
Stewart	2.9	11.2	15.2	18.8	13.6
Sullivan	2.4	13.9	39.8	...	17.9
Sumner	2.0	20.5	19.9	16.9	25.2
Tipton	2.7	23.6	34.6	...	27.5
Trousdale	4.9	26.8	47.6	...	31.3
Unicoi	1.6	17.9	20.7	30.4	21.7
Union	3.0	19.3	31.4	...	23.2
Van Buren	3.8	18.7	13.1	31.4	23.8
Warren	2.7	16.6	14.5	24.5	18.9
Washington	1.4	20.0	22.5	...	24.5
Wayne	1.9	7.7	9.7	17.7	10.7
Weakley	2.2	18.0	43.1	44.9	22.2
White	2.6	17.4	10.6	25.9	22.3
Williamson	2.4	16.4	15.0	38.1	18.9
Wilson	2.0	24.1	34.9	36.7	30.6
All counties	0.3	2.3	2.5	5.6	2.8

[1] By random-sampling formula.
[2] Sampling error greater than 50.

Table II—*Changes in volume and growth estimates due to inclusion of tree grade 5 in growing-stock inventory, Tennessee, 1989*

	Tree grade 5 Excluded from growing stock	Tree grade 5 Included as growing stock	Percent change
	Million cubic feet		
Softwood:			
Growing-stock volume	2827.8	2895.3	2.3
Rough and rotten volume	154.2	86.8	-43.7
Growing-stock growth	92.1	99.8	8.4
Hardwood:			
Growing-stock volume	12903.3	13787.4	6.9
Rough and rotten volume	2127.8	1243.7	-41.5
Growing-stock growth	437.3	537.6	22.9
	Million board feet		
Softwood:			
Sawtimber volume	9408.0	9615.4	2.2
Sawtimber growth	357.2	380.4	6.5
Hardwood:			
Sawtimber volume	40950.5	43998.2	7.4
Sawtimber growth	1819.4	2164.5	18.9

Noncommercial species. — Tree species of typically small size, poor form, or inferior quality which normally do not develop into trees suitable for industrial wood products.

Planted stands. — Stands with some evidence of planting or direct seeding.

Poletimber trees. — Growing-stock trees at least 5.0 inches in diameter at breast height, but smaller than sawtimber size.

Reserved timberland. — Productive public forest land withdrawn from timber utilization through statute or administrative regulations.

Rotten trees. — Live trees of commercial species that do not contain at least one 12-foot log or two 8-foot logs in the saw-log portion, now or prospectively, primarily because of rot.

Rough trees. — Live trees of commercial species that do not contain at least one 12-foot log or two 8-foot logs in the saw-log portion, now or prospectively, primarily because of roughness or poor form. Also included are all live trees of noncommercial species.

Saplings. — Growing-stock trees at least 1.0 inch but less than 5.0 inches in diameter at breast height.

Sawtimber trees. — Live trees that contain at least one 12-foot log or two 8-foot logs in the saw-log portion, and meet regional specifications for freedom from defect. Softwoods must be at least 9.0 inches in diameter at breast height and hardwoods at least 11.0 inches in diameter at breast height.

Sawtimber volume. — Sound-wood volume of the saw-log portion of growing-stock sawtimber trees in board feet, International 1/4-inch rule and in cubic feet.

Seedlings. — Growing-stock trees less than 1.0 inch in diameter at breast height and greater than one foot tall for hardwoods, greater than six inches tall for softwoods, and greater than one-half inch in diameter at ground level for longleaf pine.

Select red oaks. — A classification of several red oak species composed of: cherrybark, Shumard, and northern red oaks.

Select white oaks. — A classification of several white oak species composed of: white, swamp chestnut, swamp white, chinkapin, Durand, and bur oaks.

Site class. — A classification of forest land in terms of inherent capacity to grow crops of industrial wood.

Stand-size class. — A classification of forest land based on the diameter class of live trees on the sampled area; that is, sawtimber, poletimber, or sapling and seedling.

Timberland. — Forest land that is producing, or is capable of producing, crops of industrial wood and not withdrawn from timber utilization. Timberland is synonymous with "commercial forest land" in prior reports.

Tree grade. — A classification of the volume of the saw-log portion of sawtimber trees, based on: 1) the log grade of the butt log, or 2) ability to produce at least one 12-foot or two 8-foot logs in the upper-section of the saw-log portion.

Woodland. — Forest land incapable of yielding crops of industrial wood because of adverse site conditions.

CORE TABLES 1-25

Table 1–*Area by county and land class, Tennessee Counties, 1989*

		Forest land				
County	All land[1]	Total	Timberland[2]	Woodland[3]	Reserved timberland	Nonforest land
	Thousand acres					
Anderson	216.8	124.0	124.0	...	...	92.8
Bedford	304.1	74.6	74.6	...	...	229.5
Benton	279.1	172.7	172.7	...	...	106.4
Bledsoe	260.7	186.3	186.3	...	...	74.4
Blount	357.2	165.5	69.9	...	95.6	191.7
Bradley	209.5	92.5	92.5	...	...	117.0
Campbell	306.6	250.3	250.2	...	0.1	56.2
Cannon	170.0	88.5	88.5	...	...	81.5
Carroll	383.7	169.1	169.1	...	...	214.7
Carter	218.0	161.3	155.5	...	5.8	56.6
Cheatam	194.3	118.2	118.2	...	...	76.1
Chester	184.7	99.4	99.4	...	...	85.3
Claiborne	276.8	167.5	167.5	...	...	109.2
Clay	145.3	105.1	105.1	...	...	40.2
Cocke	276.5	182.0	163.4	...	18.6	94.5
Coffee	274.2	114.4	114.2	...	0.2	159.8
Crockett	170.2	15.1	15.1	...	...	155.1
Cumberland	436.7	320.3	320.3	...	...	116.3
Davidson	320.5	108.7	108.1	...	0.6	211.8
Decatur	220.8	134.8	134.8	...	...	86.0
De Kalb	186.0	114.2	114.2	...	...	71.8
Dickson	314.0	174.3	174.3	...	...	139.7
Dyer	332.6	40.4	40.4	...	...	292.2
Fayette	451.5	152.0	152.0	...	...	299.5
Fentress	318.7	244.1	244.1	...	0.1	74.6
Franklin	347.5	183.4	183.0	...	0.4	164.1
Gibson	385.6	36.4	36.4	...	...	349.2
Giles	390.7	171.8	171.8	...	...	218.9
Grainger	174.7	102.6	102.6	...	...	72.1
Greene	395.8	179.9	171.8	...	8.1	215.9
Grundy	231.2	174.5	165.9	...	8.6	56.7
Hamblen	100.1	32.8	32.8	...	...	67.3
Hamilton	345.0	210.7	210.7	...	...	134.3
Hancock	143.0	92.9	92.9	...	...	50.1
Hardeman	429.0	247.1	247.1	...	...	181.9
Hardin	380.9	219.9	219.9	...	...	161.0
Hawkins	310.7	177.3	177.3	...	...	133.4
Haywood	341.6	71.2	71.2	...	...	270.4
Henderson	332.8	158.4	158.4	...	...	174.4
Henry	358.3	176.1	176.1	...	...	182.2
Hickman	391.8	297.2	297.2	...	...	94.6
Houston	132.4	94.2	94.2	...	...	38.3
Humphreys	356.2	241.2	241.2	...	...	115.0
Jackson	197.0	135.9	135.9	...	...	61.1
Jefferson	169.9	62.2	62.2	...	...	107.7
Johnson	190.2	144.4	144.4	...	...	45.8
Knox	323.8	127.5	127.0	...	0.5	196.2
Lake	107.8	18.0	18.0	...	...	89.8

Table 1–*Area by county and land class, Tennessee Counties, 1989 - Continued*

		Forest land				
County	All land[1]	Total	Timberland[2]	Woodland[3]	Reserved timberland	Nonforest land
	- - - - - - - - - - -	- - - - - - - - - - -	- - - *Thousand acres* - - -	- - - - - - - - - - -	- - - - - - - - - - -	- - - - - - - - - - -
Lauderdale	303.7	90.0	88.8	...	1.2	213.6
Lawrence	395.4	199.8	199.8	...	...	195.5
Lewis	180.8	158.0	158.0	...	...	22.9
Lincoln	365.3	136.7	136.7	...	...	228.6
Loudon	150.5	62.3	62.3	...	...	88.1
McMinn	274.5	136.5	136.5	...	...	138.0
McNairy	359.4	224.4	224.4	...	...	135.0
Macon	196.6	77.0	77.0	...	...	119.6
Madison	357.2	140.7	140.7	...	...	216.6
Marion	328.0	251.7	251.7	...	...	76.2
Marshall	241.0	89.6	89.6	...	...	151.3
Maury	394.4	133.0	133.0	...	...	261.4
Meigs	121.1	82.9	82.9	...	...	38.2
Monroe	414.9	301.5	279.0	...	22.5	113.3
Montgomery	344.7	136.9	136.9	...	0.1	207.8
Moore	82.4	36.6	36.6	...	...	45.8
Morgan	334.5	287.8	276.2	...	11.6	46.7
Obion	352.2	67.6	67.6	...	...	284.6
Overton	277.2	170.4	170.4	...	...	106.8
Perry	271.1	223.6	223.6	...	...	47.5
Pickett	102.0	68.4	68.4	...	...	33.6
Polk	280.0	224.7	214.1	...	10.5	55.3
Putnam	255.5	152.5	152.3	...	0.1	103.0
Rhea	197.7	126.5	126.4	...	0.2	71.2
Roane	228.3	153.1	153.1	...	...	75.2
Robertson	304.6	53.0	53.0	...	...	251.5
Rutherford	387.5	155.7	155.7	...	...	231.8
Scott	338.0	300.3	300.3	...	...	37.7
Sequatchie	169.9	137.3	137.3	...	...	32.6
Sevier	377.8	254.5	127.5	...	127.1	123.3
Shelby	493.8	111.6	111.6	...	...	382.2
Smith	200.2	81.0	81.0	...	...	119.1
Stewart	316.1	219.7	219.7	...	...	96.5
Sullivan	265.8	123.6	123.6	...	...	142.1
Sumner	338.6	88.2	88.2	...	...	250.4
Tipton	290.7	50.9	50.9	...	...	239.8
Trousdale	73.1	30.0	30.0	...	...	43.2
Unicoi	119.3	99.3	89.4	...	9.9	20.0
Union	139.7	102.5	102.5	...	...	37.2
Van Buren	174.4	145.0	135.4	...	9.6	29.4
Warren	275.6	93.6	93.6	...	...	182.0
Washington	208.8	54.8	50.3	...	4.5	154.0
Wayne	470.7	372.6	372.6	...	...	98.1
Weakley	372.1	96.1	95.9	...	0.2	276.0
White	238.7	129.4	129.4	...	...	109.3
Williamson	373.6	142.0	142.0	...	...	231.6
Wilson	365.1	98.1	97.0	...	1.1	267.0
All counties	26447.0	13602.5	13265.2	...	337.3	12844.5

[1] From U.S. Bureau of the Census.

[2] Forest land (formerly termed commercial forest land) that is producing or capable of producing at least 20 cubic feet of industrial wood per acre per year. Includes areas which may be inaccessible or inoperable by current standards. Excludes reserved timberlands.

[3] Forest land incapable of producing 20 cubic feet of industrial wood per acre per year under natural conditions because of adverse site conditions.

Table 2–*Area of timberland by county and ownership class, Tennessee Counties, 1989*

County	All ownerships	National forest	Misc. federal	State	County and municipal	Forest industry[1]	Farmer	Corporate[2]	Individual[2]
	Thousand acres								
Anderson	124.0	...	6.5	...	...	...	26.1	71.8	19.6
Bedford	74.6	...	...	...	...	5.3	32.0	...	37.3
Benton	172.7	...	19.2	...	...	12.8	38.4	6.4	95.9
Bledsoe	186.3	...	...	17.5	...	34.9	34.9	34.9	64.0
Blount	69.9	...	...	...	...	9.1	27.4	3.0	30.4
Bradley	92.5	...	...	...	...	15.4	15.4	...	61.7
Campbell	250.2	...	11.6	29.1	5.8	5.8	40.7	110.6	46.6
Cannon	88.5	...	...	...	...	...	41.6	...	46.8
Carroll	169.1	...	5.8	11.7	...	11.7	23.3	...	116.6
Carter	155.5	78.1	...	...	...	...	17.2	...	60.2
Cheatam	118.2	...	...	23.6	...	...	17.7	11.8	65.0
Chester	99.4	...	...	9.9	...	19.9	29.8	5.0	34.8
Claiborne	167.5	...	...	...	...	...	87.4	51.0	29.1
Clay	105.1	...	...	...	...	...	72.8	...	32.3
Cocke	163.4	44.3	...	...	...	5.7	56.7	...	56.7
Coffee	114.2	...	10.4	...	...	...	51.9	15.6	36.3
Crockett	15.1	...	...	...	...	...	7.6	...	7.6
Cumberland	320.3	...	...	52.4	5.8	46.6	29.1	46.6	139.8
Davidson	108.1	...	6.4	...	6.4	...	12.7	6.4	76.3
Decatur	134.8	...	5.4	5.4	...	...	43.1	16.2	64.7
De Kalb	114.2	...	11.4	...	...	...	28.5	...	74.2
Dickson	174.3	...	...	...	...	...	114.2	12.0	48.1
Dyer	40.4	...	...	10.1	...	10.1	10.1	10.1	...
Fayette	152.0	...	...	...	...	...	86.9	32.6	32.6
Fentress	244.1	...	5.8	11.6	...	87.2	23.2	40.7	75.5
Franklin	183.0	...	17.2	5.7	...	...	11.4	28.6	120.1
Gibson	36.4	...	...	...	...	...	36.4	...	...
Giles	171.8	...	...	...	...	9.8	103.1	...	58.9
Grainger	102.6	...	...	...	...	...	59.4	5.4	37.8
Greene	171.8	29.6	...	...	...	...	74.0	5.7	62.6
Grundy	165.9	...	5.7	...	...	34.3	11.4	28.6	85.8
Hamblen	32.8	...	...	...	...	...	24.6	...	8.2
Hamilton	210.7	...	19.7	6.6	...	13.2	32.9	19.7	118.5
Hancock	92.9	...	...	...	...	...	81.3	...	11.6
Hardeman	247.1	...	...	6.2	...	18.5	98.8	6.2	117.4
Hardin	219.9	...	9.6	...	...	38.2	76.5	14.3	81.3
Hawkins	177.3	...	5.7	...	5.7	5.7	85.8	5.7	68.6
Haywood	71.2	...	...	...	...	17.8	41.5	...	11.9
Henderson	158.4	...	22.6	5.7	...	...	73.6	...	56.6
Henry	176.1	...	13.0	...	...	6.5	45.6	6.5	104.3
Hickman	297.2	...	...	...	...	72.9	89.7	28.0	106.5
Houston	94.2	...	...	...	...	...	21.7	7.2	65.2
Humphreys	241.2	...	...	...	...	6.0	54.3	18.1	162.8
Jackson	135.9	...	...	...	...	...	31.4	...	104.5
Jefferson	62.2	...	...	...	...	...	33.9	11.3	17.0
Johnson	144.4	50.5	...	...	...	...	20.1	...	73.7
Knox	127.0	...	...	...	...	...	31.7	15.9	79.4
Lake	18.0	...	...	18.0	...	...	...	...	...

Table 2–*Area of timberland by county and ownership class, Tennessee Counties, 1989 - Continued*

County	All ownerships	National forest	Misc. federal	State	County and municipal	Forest industry[1]	Farmer	Corporate[2]	Individual[2]
					- - - - - Thousand acres - - - - -				
Lauderdale	88.8	...	16.2	...	...	24.2	32.3	...	16.2
Lawrence	199.8	...	...	20.7	...	27.6	103.4	6.9	41.3
Lewis	158.0	...	5.9	5.9	...	46.8	23.4	5.9	70.2
Lincoln	136.7	...	...	...	...	...	83.2	...	53.5
Loudon	62.3	...	11.3	...	...	5.7	34.0	...	11.3
McMinn	136.5	2.2	...	...	...	28.0	22.4	...	84.0
McNairy	224.4	...	...	5.8	...	40.3	40.3	...	138.1
Macon	77.0	...	...	...	...	...	56.0	...	21.0
Madison	140.7	...	...	6.1	...	...	36.7	6.1	91.7
Marion	251.7	...	...	18.0	...	30.0	12.0	36.0	155.8
Marshall	89.6	...	...	...	...	...	69.7	5.0	14.9
Maury	133.0	...	...	...	6.7	...	53.2	13.3	59.9
Meigs	82.9	...	...	5.9	...	11.8	23.7	...	41.5
Monroe	279.0	121.3	15.0	...	...	7.5	45.1	15.0	75.1
Montgomery	136.9	...	31.1	...	...	6.2	24.9	...	74.7
Moore	36.6	...	...	...	...	...	20.9	5.2	10.5
Morgan	276.2	...	5.6	28.2	...	5.6	16.9	50.7	169.1
Obion	67.6	...	6.1	6.1	...	12.3	24.6	...	18.4
Overton	170.4	...	6.8	13.6	...	...	61.3	13.6	75.0
Perry	223.6	...	5.7	...	...	63.1	68.8	22.9	63.1
Pickett	68.4	...	13.7	6.8	...	...	13.7	6.8	27.4
Polk	214.1	136.6	...	...	...	...	29.8	17.9	29.8
Putnam	152.3	...	5.4	...	...	...	27.2	38.1	81.6
Rhea	126.4	...	5.5	...	5.5	44.0	27.5	...	44.0
Roane	153.1	...	26.4	5.3	...	...	21.1	10.6	89.7
Robertson	53.0	...	...	...	...	...	37.9	7.6	7.6
Rutherford	155.7	...	5.6	5.6	5.6	...	44.5	5.6	88.9
Scott	300.3	...	49.1	5.5	...	10.9	60.1	92.8	81.9
Sequatchie	137.3	...	...	...	...	22.9	...	5.7	108.7
Sevier	127.5	...	...	...	...	...	33.0	4.7	89.7
Shelby	111.6	...	...	19.7	13.1	...	26.3	...	52.5
Smith	81.0	...	...	...	...	...	67.5	...	13.5
Stewart	219.7	...	62.8	6.3	...	69.0	25.1	...	56.5
Sullivan	123.6	37.1	4.8	...	4.8	...	28.8	4.8	43.3
Sumner	88.2	...	...	...	...	...	56.7	...	31.5
Tipton	50.9	...	...	...	...	...	43.6	...	7.3
Trousdale	30.0	...	...	...	...	...	...	...	30.0
Unicoi	89.4	43.8	...	12.4	...	...	...	...	33.2
Union	102.5	...	10.8	16.2	...	...	27.0	...	48.6
Van Buren	135.4	...	...	5.4	...	27.1	10.8	65.0	27.1
Warren	93.6	...	...	...	...	...	46.8	15.6	31.2
Washington	50.3	12.4	...	...	...	...	14.2	...	23.7
Wayne	372.6	...	...	...	...	145.3	56.8	31.6	139.0
Weakley	95.9	...	7.4	...	...	...	14.8	7.4	66.4
White	129.4	...	...	...	...	28.1	45.0	5.6	50.6
Williamson	142.0	...	...	...	...	...	78.9	...	63.1
Wilson	97.0	...	...	15.3	...	...	51.0	5.1	25.5
All counties	13265.2	556.0	471.4	422.2	59.4	1143.9	3848.9	1181.4	5582.2

[1] Includes land leased to forest industry.

[2] Indian land will be classed as corporate or individual as defined by the Bureau of Indian Affairs.

Table 3—*Area of timberland by county and forest type group, Tennessee Counties, 1989*

County	Total	Forest type group								
		White-red jack pine	Loblolly-shortleaf pine[1]		Oak-pine[2]	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood	Maple-beech birch	Nontyped[3]
			Planted	Natural						
	Thousand acres									
Anderson	124.0	...	...	13.1	6.5	97.9	...	...	6.5	...
Bedford	74.6	...	...	16.0	10.7	42.6	5.3	...	...	...
Benton	172.7	...	12.8	...	12.8	140.7	6.4	...	...	...
Bledsoe	186.3	...	23.3	17.5	29.1	116.4	...	...	...	...
Blount	69.9	3.0	3.0	6.1	24.3	33.4	...	...	...	...
Bradley	92.5	...	...	30.8	15.4	46.3	...	...	...	...
Campbell	250.2	...	5.8	17.5	29.1	197.9	...	...	...	...
Cannon	88.5	...	...	5.2	10.4	72.9	...	...	...	...
Carroll	169.1	...	5.8	...	5.8	122.4	35.0	...	...	...
Carter	155.5	...	...	8.6	17.2	120.5	...	...	9.2	...
Cheatam	118.2	...	...	...	...	118.2	...	...	...	...
Chester	99.4	...	5.0	5.0	29.8	49.7	5.0	5.0	...	...
Claiborne	167.5	...	...	7.3	21.9	116.6	...	...	21.9	...
Clay	105.1	...	...	...	8.1	97.0	...	..	...	...
Cocke	163.4	...	...	17.0	25.9	114.8	5.7	...	...	...
Coffee	114.2	...	...	...	...	109.0	5.2	...	...	...
Crockett	15.1	...	...	...	...	15.1	...	...	...	...
Cumberland	320.3	5.8	23.3	23.3	58.2	209.7	...	...	...	...
Davidson	108.1	...	...	...	12.7	95.4	...	...	...	...
Decatur	134.8	...	5.4	...	5.4	118.6	5.4	...	...	...
De Kalb	114.2	...	...	11.4	22.8	74.2	5.7	...	...	...
Dickson	174.3	...	...	...	6.0	168.3	...	...	...	...
Dyer	40.4	...	...	...	...	10.1	30.3	...	...	...
Fayette	152.0	...	...	21.7	10.9	108.6	10.9	...	...	...
Fentress	244.1	...	11.6	40.7	40.7	151.1	...	...	...	...
Franklin	183.0	...	...	...	11.4	171.6	...	...	...	...
Gibson	36.4	...	...	...	...	36.4	...	...	...	...
Giles	171.8	4.9	...	4.9	4.9	152.2	4.9	...	...	...
Grainger	102.6	...	...	...	16.2	86.4	...	...	...	...
Greene	171.8	...	...	28.4	21.3	116.4	...	...	5.7	...
Grundy	165.9	...	...	11.4	5.7	143.0	...	...	...	5.7
Hamblen	32.8	...	...	8.2	8.2	16.4	...	...	...	...
Hamilton	210.7	...	6.6	32.9	39.5	125.1	6.6	...	...	...
Hancock	92.9	...	...	...	5.8	75.5	...	...	11.6	...
Hardeman	247.1	...	18.5	12.4	30.9	154.4	30.9	...	...	...
Hardin	219.9	...	33.5	14.3	38.2	100.4	33.5	...	...	...
Hawkins	177.3	...	...	11.4	34.3	125.9	...	...	5.7	...
Haywood	71.2	...	...	...	...	11.9	59.3	...	...	...
Henderson	158.4	...	17.0	28.3	5.7	84.9	22.6	...	...	...
Henry	176.1	...	6.5	...	...	123.9	45.6	...	...	...
Hickman	297.2	...	5.6	...	...	291.6	...	...	...	...
Houston	94.2	...	...	...	...	94.2	...	...	...	...
Humphreys	241.2	...	...	...	...	241.2	...	...	...	...
Jackson	135.9	...	...	...	31.4	104.5	...	...	...	...
Jefferson	62.2	...	11.3	...	5.7	45.2	...	...	...	...
Johnson	144.4	...	...	...	26.8	104.1	...	...	13.4	...
Knox	127.0	...	...	15.9	31.7	79.4	...	...	...	...
Lake	18.0	...	...	...	...	...	18.0	...	...	...

Table 3—*Area of timberland by county and forest type group, Tennessee Counties, 1989 - Continued*

County	Total	Forest type group								
		White-red jack pine	Loblolly-shortleaf pine[1]		Oak-pine[2]	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood	Maple-beech birch	Nontyped[3]
			Planted	Natural						
	Thousand acres									
Lauderdale	88.8	...	...	...	...	32.3	32.3	24.2	...	...
Lawrence	199.8	...	...	...	6.9	186.1	6.9	...	...	...
Lewis	158.0	...	5.9	...	5.9	134.6	11.7	...	...	...
Lincoln	136.7	...	...	17.8	17.8	89.1	11.9	...	...	...
Loudon	62.3	...	5.7	17.0	11.3	22.7	...	...	5.7	...
McMinn	136.5	...	22.4	44.8	16.8	46.9	5.6	...	...	...
McNairy	224.4	...	5.8	40.3	40.3	120.8	17.3	...	...	...
Macon	77.0	...	...	...	...	77.0	...	...	...	...
Madison	140.7	...	...	6.1	24.5	61.2	48.9	...	...	...
Marion	251.7	...	6.0	...	36.0	203.8	6.0	...	...	...
Marshall	89.6	...	...	5.0	24.9	59.7	...	...	...	...
Maury	133.0	...	...	6.7	6.7	119.7	...	...	...	...
Meigs	82.9	...	17.8	...	23.7	41.5	...	...	...	...
Monroe	279.0	7.1	...	77.9	76.8	106.5	...	...	10.7	...
Montgomery	136.9	...	...	...	12.4	124.4	...	...	...	...
Moore	36.6	...	...	...	...	36.6	...	...	...	...
Morgan	276.2	...	5.6	...	84.5	186.0	...	...	...	...
Obion	67.6	...	...	...	...	30.7	36.8	...	...	...
Overton	170.4	...	...	6.8	13.6	149.9	...	...	...	...
Perry	223.6	...	...	11.5	5.7	200.7	5.7	...	...	...
Pickett	68.4	...	...	...	6.8	61.6	...	...	...	...
Polk	214.1	12.8	...	82.7	47.8	60.6	...	...	10.2	...
Putnam	152.3	...	...	10.9	16.3	125.1	...	...	...	...
Rhea	126.4		5.5	5.5	27.5	87.9	...	...	...	...
Roane	153.1	...	5.3	5.3	26.4	116.1	...	...	...	...
Robertson	53.0	...	...	...	...	53.0	...	...	...	...
Rutherford	155.7	...	...	50.0	38.9	66.7	...	...	...	...
Scott	300.3	5.5	...	16.4	38.2	240.2	...	...	...	...
Sequatchie	137.3	5.7	11.4	40.0	...	80.1	...	...	...	...
Sevier	127.5	...	...	14.2	51.9	61.4	...	...	...	...
Shelby	111.6	...	...	...	...	59.1	45.9	6.6	...	...
Smith	81.0	...	...	13.5	6.8	60.8	...	...	...	...
Stewart	219.7	...	...	6.3	...	213.4	...	...	...	...
Sullivan	123.6	7.4	...	4.8	20.8	90.7	...	...	...	...
Sumner	88.2	...	...	12.6	...	75.6	...	...	...	...
Tipton	50.9	...	...	...	...	36.3	7.3	7.3	...	...
Trousdale	30.0	...	...	...	12.0	18.0	...	...	...	...
Unicoi	89.4	6.3	...	...	20.8	62.4	...	...	...	...
Union	102.5	...	...	10.8	21.6	59.3	...	...	10.8	...
Van Buren	135.4	5.4	10.8	21.7	10.8	86.7	...	...	...	...
Warren	93.6	...	...	...	5.2	83.2	5.2	...	...	...
Washington	50.3	...	...	...	8.9	41.4	...	...	...	...
Wayne	372.6	...	25.3	12.6	18.9	309.5	6.3	...	...	...
Weakley	95.9	...	7.4	...	...	44.3	44.3	...	...	...
White	129.4	...	16.9	5.6	5.6	95.7	5.6	...	...	...
Williamson	142.0	...	...	15.8	15.8	105.2	5.3	...	...	...
Wilson	97.0	...	...	15.3	61.2	20.4	...	...	...	...
All counties	13265.2	64.0	346.7	987.1	1591.5	9476.5	639.3	43.0	111.4	5.7

[1] Includes redcedar forest type.
[2] Includes redcedar-hardwood forest type.
[3] Timberland with no current stocking.

Table 4–*Area of timberland by county and stand-size class, Tennessee Counties, 1989*

County	All classes	Stand-size class			Nonstocked areas
		Sawtimber	Poletimber	Sapling-seedling	
	Thousand acres				
Anderson	124.0	91.4	26.1	6.5	...
Bedford	74.6	26.6	32.0	16.0	...
Benton	172.7	51.2	76.8	44.8	...
Bledsoe	186.3	46.6	93.1	46.6	...
Blount	69.9	45.6	15.2	9.1	...
Bradley	92.5	61.7	...	30.8	...
Campbell	250.2	157.1	64.0	29.1	...
Cannon	88.5	31.2	41.6	15.6	...
Carroll	169.1	93.3	70.0	5.8	...
Carter	155.5	111.3	44.2	...	...
Cheatam	118.2	59.1	41.4	17.7	...
Chester	99.4	29.8	39.8	29.8	...
Claiborne	167.5	94.7	51.0	21.9	...
Clay	105.1	16.2	48.5	40.4	...
Cocke	163.4	84.5	61.8	17.0	...
Coffee	114.2	72.7	31.1	10.4	...
Crockett	15.1	15.1	...	...	...
Cumberland	320.3	157.3	110.7	52.4	...
Davidson	108.1	44.5	50.9	12.7	...
Decatur	134.8	75.5	48.5	10.8	...
De Kalb	114.2	57.1	40.0	17.1	...
Dickson	174.3	102.2	48.1	24.0	...
Dyer	40.4	40.4	...	...	...
Fayette	152.0	108.6	32.6	10.9	...
Fentress	244.1	104.6	116.2	23.2	...
Franklin	183.0	85.8	57.2	40.0	...
Gibson	36.4	24.2	...	12.1	...
Giles	171.8	34.4	83.4	54.0	...
Grainger	102.6	70.2	27.0	5.4	...
Greene	171.8	100.8	44.1	27.0	...
Grundy	165.9	57.2	57.2	45.8	5.7
Hamblen	32.8	24.6	8.2	...	...
Hamilton	210.7	125.1	52.7	32.9	...
Hancock	92.9	34.8	17.4	40.7	...
Hardeman	247.1	117.4	80.3	49.4	...
Hardin	219.9	76.5	109.9	33.5	...
Hawkins	177.3	91.5	51.5	34.3	...
Haywood	71.2	53.4	5.9	11.9	...
Henderson	158.4	90.5	45.3	22.6	...
Henry	176.1	97.8	32.6	45.6	...
Hickman	297.2	106.5	173.8	16.8	...
Houston	94.2	36.2	29.0	29.0	...
Humphreys	241.2	108.6	90.5	42.2	...
Jackson	135.9	52.3	47.0	36.6	...
Jefferson	62.2	39.6	5.7	17.0	...
Johnson	144.4	67.2	57.1	20.1	...
Knox	127.0	63.5	31.7	31.7	...
Lake	18.0	18.0	...	...	...

Table 4–*Area of timberland by county and stand-size class, Tennessee Counties, 1989 Continued*

County	All classes	Stand-size class			Nonstocked areas
		Sawtimber	Poletimber	Sapling-seedling	
	- - - - - - - - - -	- - - - - - - - - -	Thousand acres	- - - - - - - - - -	- - - - - - - - - -
Lauderdale	88.8	72.7	...	16.2	...
Lawrence	199.8	62.0	82.7	55.1	...
Lewis	158.0	58.5	64.4	35.1	...
Lincoln	136.7	29.7	65.4	41.6	...
Loudon	62.3	45.3	...	17.0	...
McMinn	136.5	61.6	56.0	18.9	...
McNairy	224.4	69.0	103.6	51.8	...
Macon	77.0	49.0	14.0	14.0	...
Madison	140.7	97.9	30.6	12.2	...
Marion	251.7	161.8	47.9	42.0	...
Marshall	89.6	34.8	19.9	34.8	...
Maury	133.0	39.9	53.2	39.9	...
Meigs	82.9	41.5	35.5	5.9	...
Monroe	279.0	154.0	73.2	51.8	...
Montgomery	136.9	56.0	49.8	31.1	...
Moore	36.6	26.1	10.5	...	...
Morgan	276.2	146.6	73.3	56.4	...
Obion	67.6	55.3	12.3	...	...
Overton	170.4	122.7	34.1	13.6	...
Perry	223.6	68.8	114.7	40.1	...
Pickett	68.4	41.1	20.5	6.8	...
Polk	214.1	113.5	35.0	65.7	...
Putnam	152.3	76.2	43.5	32.6	...
Rhea	126.4	54.9	44.0	27.5	...
Roane	153.1	79.2	58.1	15.8	...
Robertson	53.0	37.9	7.6	7.6	...
Rutherford	155.7	33.4	50.0	72.3	...
Scott	300.3	196.6	76.4	27.3	...
Sequatchie	137.3	57.2	51.5	28.6	...
Sevier	127.5	70.8	42.5	14.2	...
Shelby	111.6	72.2	32.8	6.6	...
Smith	81.0	13.5	47.3	20.3	...
Stewart	219.7	125.5	50.2	43.9	...
Sullivan	123.6	62.9	47.4	13.3	...
Sumner	88.2	63.0	12.6	12.6	...
Tipton	50.9	36.3	7.3	7.3	...
Trousdale	30.0	6.0	24.0	...	...
Unicoi	89.4	60.3	25.0	4.1	...
Union	102.5	70.1	21.6	10.8	...
Van Buren	135.4	43.3	43.3	48.8	...
Warren	93.6	46.8	36.4	10.4	...
Washington	50.3	32.6	13.0	4.7	...
Wayne	372.6	101.1	195.8	75.8	...
Weakley	95.9	73.8	14.8	7.4	...
White	129.4	67.5	50.6	11.3	...
Williamson	142.0	52.6	78.9	10.5	...
Wilson	97.0	25.5	35.7	35.7	...
All counties	13265.2	6521.2	4397.5	2340.8	5.7

Table 5—*Area of timberland by county and site class, Tennessee Counties, 1989*

		Site class (cubic feet/acre/year)				
County	All classes	> 165	120-165	85-120	50-85	< 50
	Thousand acres					
Anderson	124.0	13.1	19.6	19.6	65.3	6.5
Bedford	74.6	...	10.7	16.0	16.0	32.0
Benton	172.7	...	6.4	57.6	89.5	19.2
Bledsoe	186.3	23.3	5.8	46.6	75.7	34.9
Blount	69.9	...	6.1	15.2	45.6	3.0
Bradley	92.5	...	15.4	15.4	61.7	...
Campbell	250.2	11.6	40.7	98.9	75.7	23.3
Cannon	88.5	5.2	10.4	15.6	31.2	26.0
Carroll	169.1	...	29.1	81.6	46.6	11.7
Carter	155.5	...	17.8	52.8	49.4	35.6
Cheatam	118.2	5.9	17.7	17.7	70.9	5.9
Chester	99.4	5.0	5.0	59.7	19.9	9.9
Claiborne	167.5	...	21.9	51.0	43.7	51.0
Clay	105.1	...	...	32.3	64.7	8.1
Cocke	163.4	...	11.3	42.9	93.4	15.8
Coffee	114.2	...	15.6	57.1	41.5	...
Crockett	15.1	7.6	...	7.6	...	...
Cumberland	320.3	23.3	29.1	93.2	128.1	46.6
Davidson	108.1	6.4	...	19.1	57.2	25.4
Decatur	134.8	5.4	27.0	43.1	48.5	10.8
De Kalb	114.2	...	40.0	34.2	17.1	22.8
Dickson	174.3	6.0	18.0	30.0	102.2	18.0
Dyer	40.4	...	...	...	40.4	...
Fayette	152.0	21.7	21.7	32.6	54.3	21.7
Fentress	244.1	5.8	29.1	93.0	98.8	17.4
Franklin	183.0	...	...	28.6	85.8	68.6
Gibson	36.4	...	12.1	...	24.2	...
Giles	171.8	...	39.3	24.5	78.5	29.5
Grainger	102.6	16.2	32.4	10.8	27.0	16.2
Greene	171.8	5.7	15.6	44.1	35.4	71.0
Grundy	165.9	5.7	11.4	51.5	45.8	51.5
Hamblen	32.8	...	...	16.4	16.4	...
Hamilton	210.7	...	19.7	65.8	105.3	19.7
Hancock	92.9	...	5.8	34.8	40.7	11.6
Hardeman	247.1	6.2	43.2	68.0	111.2	18.5
Hardin	219.9	4.8	43.0	109.9	57.4	4.8
Hawkins	177.3	5.7	5.7	51.5	51.5	62.9
Haywood	71.2	5.9	23.7	35.6	5.9	...
Henderson	158.4	11.3	17.0	79.2	45.3	5.7
Henry	176.1	...	13.0	71.7	78.3	13.0
Hickman	297.2	5.6	16.8	100.9	162.6	11.2
Houston	94.2	...	14.5	21.7	57.9	...
Humphreys	241.2	6.0	...	48.2	108.6	78.4
Jackson	135.9	...	15.7	20.9	73.2	26.1
Jefferson	62.2	11.3	...	11.3	33.9	5.7
Johnson	144.4	...	3.4	10.1	97.3	33.6
Knox	127.0	23.8	31.7	23.8	47.6	...
Lake	18.0	...	...	18.0	...	...

Table 5—*Area of timberland by county and site class, Tennessee Counties, 1989 Continued*

County	All classes	Site class (cubic feet/acre/year)				
		>165	120-165	85-120	50-85	<50
	Thousand acres					
Lauderdale	88.8	16.2	24.2	16.2	32.3	...
Lawrence	199.8	6.9	13.8	34.5	96.5	48.2
Lewis	158.0	...	...	29.3	105.3	23.4
Lincoln	136.7	...	...	17.8	71.3	47.5
Loudon	62.3	5.7	28.3	...	22.7	5.7
McMinn	136.5	16.8	16.8	18.9	72.8	11.2
McNairy	224.4	...	11.5	109.3	69.0	34.5
Macon	77.0	...	21.0	49.0	7.0	...
Madison	140.7	24.5	18.3	30.6	48.9	18.3
Marion	251.7	18.0	30.0	36.0	119.9	47.9
Marshall	89.6	...	10.0	10.0	59.7	10.0
Maury	133.0	...	20.0	20.0	46.6	46.6
Meigs	82.9	...	...	35.5	41.5	5.9
Monroe	279.0	44.3	51.8	84.7	65.0	33.2
Montgomery	136.9	6.2	12.4	56.0	49.8	12.4
Moore	36.6	...	...	10.5	20.9	5.2
Morgan	276.2	...	11.3	78.9	157.8	28.2
Obion	67.6	18.4	...	49.1	...	...
Overton	170.4	6.8	13.6	68.1	61.3	20.4
Perry	223.6	...	11.5	51.6	114.7	45.9
Pickett	68.4	6.8	13.7	13.7	20.5	13.7
Polk	214.1	4.3	29.0	77.7	82.7	20.5
Putnam	152.3	10.9	27.2	38.1	70.7	5.4
Rhea	126.4	5.5	11.0	38.5	54.9	16.5
Roane	153.1	21.1	42.2	42.2	47.5	...
Robertson	53.0	...	...	30.3	15.2	7.6
Rutherford	155.7	...	...	...	55.6	100.1
Scott	300.3	...	49.1	65.5	152.9	32.8
Sequatchie	137.3	22.9	22.9	28.6	57.2	5.7
Sevier	127.5	14.2	9.4	18.9	47.2	37.8
Shelby	111.6	39.4	13.1	26.3	32.8	...
Smith	81.0	...	...	20.3	54.0	6.8
Stewart	219.7	...	12.6	50.2	75.3	81.6
Sullivan	123.6	...	9.6	8.5	87.4	18.1
Sumner	88.2	...	12.6	25.2	44.1	6.3
Tipton	50.9	...	14.5	29.1	7.3	...
Trousdale	30.0	...	...	...	24.0	6.0
Unicoi	89.4	6.3	29.1	8.3	45.8	...
Union	102.5	...	16.2	48.6	32.4	5.4
Van Buren	135.4	16.3	10.8	48.8	32.5	27.1
Warren	93.6	5.2	5.2	20.8	46.8	15.6
Washington	50.3	4.7	9.5	18.3	13.6	4.1
Wayne	372.6	...	25.3	56.8	221.1	69.5
Weakley	95.9	14.8	22.1	36.9	22.1	...
White	129.4	...	...	28.1	90.0	11.3
Williamson	142.0	5.3	26.3	36.8	57.9	15.8
Wilson	97.0	5.1	...	...	66.4	25.5
All counties	13265.2	594.8	1468.6	3602.4	5648.0	1951.4

Table 6–*Area of timberland by county and stocking classes of growing-stock trees, Tennessee Counties, 1989*

County	All classes	Stocking class (percent)				
		> 130	100-130	60-100	16.7-60	< 16.7
	Thousand acres					
Anderson	124.0	...	13.1	97.9	13.1	...
Bedford	74.6	...	16.0	37.3	21.3	...
Benton	172.7	...	38.4	89.5	44.8	...
Bledsoe	186.3	...	64.0	104.8	17.5	...
Blount	69.9	...	12.2	57.8	...	...
Bradley	92.5	15.4	...	61.7	15.4	...
Campbell	250.2	...	40.7	174.6	34.9	...
Cannon	88.5	...	5.2	57.2	20.8	5.2
Carroll	169.1	...	23.3	134.1	11.7	...
Carter	155.5	...	39.6	98.1	17.8	...
Cheatam	118.2	...	11.8	70.9	35.5	...
Chester	99.4	...	39.8	49.7	9.9	...
Claiborne	167.5	...	29.1	109.3	29.1	...
Clay	105.1	...	...	80.8	24.3	...
Cocke	163.4	...	48.6	103.5	11.3	...
Coffee	114.2	...	25.9	67.5	20.8	...
Crockett	15.1	...	7.6	7.6	...	...
Cumberland	320.3	...	104.8	209.7	5.8	...
Davidson	108.1	...	...	63.6	44.5	...
Decatur	134.8	5.4	16.2	107.9	5.4	...
De Kalb	114.2	...	22.8	85.6	5.7	...
Dickson	174.3	...	24.0	132.2	12.0	6.0
Dyer	40.4	...	...	20.2	20.2	...
Fayette	152.0	...	32.6	108.6	10.9	...
Fentress	244.1	5.8	69.7	168.5	...	...
Franklin	183.0	...	...	125.8	57.2	...
Gibson	36.4	...	...	24.2	12.1	...
Giles	171.8	...	14.7	93.3	63.8	...
Grainger	102.6	...	21.6	81.0	...	...
Greene	171.8	...	39.7	99.5	32.7	...
Grundy	165.9	...	34.3	91.5	34.3	5.7
Hamblen	32.8	...	8.2	24.6	...	...
Hamilton	210.7	...	26.3	125.1	52.7	6.6
Hancock	92.9	5.8	11.6	29.0	46.5	...
Hardeman	247.1	...	49.4	142.1	55.6	...
Hardin	219.9	4.8	23.9	157.7	33.5	...
Hawkins	177.3	...	5.7	131.6	40.0	...
Haywood	71.2	...	17.8	47.5	5.9	...
Henderson	158.4	...	34.0	113.2	11.3	...
Henry	176.1	...	45.6	97.8	32.6	...
Hickman	297.2	...	39.3	229.9	28.0	...
Houston	94.2	...	14.5	65.2	14.5	...
Humphreys	241.2	6.0	24.1	168.9	42.2	...

Table 6–*Area of timberland by county and stocking classes of growing-stock trees, Tennessee Counties, 1989 - Continued*

County	All classes	Stocking class (percent)				
		> 130	100-130	60-100	16.7-60	< 16.7
	Thousand acres					
Jackson	135.9	...	15.7	67.9	47.0	5.2
Jefferson	62.2	...	39.6	22.6	...	...
Johnson	144.4	...	26.9	107.4	10.1	...
Knox	127.0	...	23.8	87.3	15.9	...
Lake	18.0	...	18.0	...	...	...
Lauderdale	88.8	...	8.1	32.3	40.4	8.1
Lawrence	199.8	6.9	27.6	137.8	27.6	...
Lewis	158.0	...	35.1	117.0	5.9	...
Lincoln	136.7	...	23.8	77.2	35.7	...
Loudon	62.3	...	17.0	34.0	11.3	...
McMinn	136.5	5.6	44.8	74.9	11.2	...
McNairy	224.4	5.8	51.8	138.1	28.8	...
Macon	77.0	...	7.0	63.0	7.0	...
Madison	140.7	...	30.6	97.9	12.2	...
Marion	251.7	...	6.0	191.8	53.9	...
Marshall	89.6	...	...	49.8	39.8	...
Maury	133.0	...	...	106.4	26.6	...
Meigs	82.9	5.9	29.6	47.4	...	...
Monroe	279.0	7.1	95.4	165.4	11.1	...
Montgomery	136.9	...	12.4	74.7	49.8	...
Moore	36.6	...	5.2	20.9	10.5	...
Morgan	276.2	...	62.0	197.3	16.9	...
Obion	67.6	6.1	6.1	43.0	12.3	...
Overton	170.4	...	34.1	122.7	13.6	...
Perry	223.6	...	22.9	137.6	63.1	...
Pickett	68.4	...	13.7	54.7	...	...
Polk	214.1	8.5	91.3	96.4	17.9	...
Putnam	152.3	...	38.1	76.2	38.1	...
Rhea	126.4	5.5	38.5	60.4	22.0	...
Roane	153.1	...	26.4	121.4	5.3	...
Robertson	53.0	...	...	37.9	15.2	...
Rutherford	155.7	...	11.1	66.7	55.6	22.2
Scott	300.3	10.9	103.7	163.8	21.8	...
Sequatchie	137.3	11.4	22.9	103.0	...	...
Sevier	127.5	...	37.8	80.2	9.4	...
Shelby	111.6	...	26.3	72.2	13.1	...
Smith	81.0	...	13.5	47.3	20.3	...
Stewart	219.7	...	12.6	163.2	37.7	6.3
Sullivan	123.6	...	36.7	67.7	19.2	...
Sumner	88.2	...	...	44.1	44.1	...
Tipton	50.9	...	7.3	36.3	7.3	...
Trousdale	30.0	...	...	18.0	12.0	...
Unicoi	89.4	...	25.0	54.1	10.4	...
Union	102.5	5.4	21.6	70.1	5.4	...
Van Buren	135.4	...	37.9	97.5	...	...
Warren	93.6	...	5.2	67.6	20.8	...
Washington	50.3	...	21.8	23.7	4.7	...
Wayne	372.6	...	63.2	259.0	50.5	...
Weakley	95.9	...	22.1	51.6	22.1	...
White	129.4	11.3	33.8	84.4	...	...
Williamson	142.0	...	21.0	73.6	47.3	...
Wilson	97.0	...	...	66.4	30.6	...
All counties	13265.2	133.7	2470.9	8518.4	2076.9	65.3

Table 7–*Area of timberland by forest type and ownership class, Tennessee Counties, 1989*

Forest type[1]	All ownerships	National forest	Other public	Forest industry	Forest industry-leased	Other private
	Thousand acres					
White-red-jack pine	64.0	33.6	11.2	4.9	...	14.2
Loblolly-shortleaf pine	1333.8	64.8	63.4	257.4	4.8	943.3
Softwood total	1397.8	98.4	74.6	262.4	4.8	957.5
Oak-pine	1591.5	116.7	132.2	112.7	5.7	1224.2
Oak-hickory	9476.5	316.6	610.2	670.7	6.0	7873.1
Oak-gum-cypress	639.3	...	110.2	61.9	5.9	461.2
Elm-ash-cottonwood	43.0	...	14.6	8.1	...	20.3
Maple-beech-birch	111.4	24.2	11.1	...	...	76.2
Hardwood total	11861.8	457.5	878.3	853.4	17.6	9654.9
Nontyped[2]	5.7	...	...	5.7	...	...
All types	13265.2	556.0	952.9	1121.5	22.4	10612.5

[1] Forest type is based on species plurality of all live trees. Mixed types that in combination contain a majority of hardwood stocking are hardwood types.

[2] Timberland with no current stocking.

Table 8–*Area of timberland by ownership and stocking classes of growing-stock trees, Tennessee Counties, 1989*

Ownership class	All classes	Stocking class (percent)				
		> 130	100-130	60-100	16.7-60	< 16.7
	Thousand acres					
National forest	556.0	15.7	198.5	315.2	26.6	...
Other public	952.9	...	217.6	561.9	161.6	11.8
Forest industry	1121.5	45.4	288.9	674.4	107.2	5.7
Forest industry-leased	22.4	...	...	16.7	5.7	...
Other private	10612.5	72.7	1765.9	6950.3	1775.8	47.8
All ownerships	13265.2	133.7	2470.9	8518.4	2076.9	65.3

Table 9–*Area of timberland by forest type and stand-size class, Tennessee Counties, 1989*

Forest type[1]	All classes	Stand-size class Sawtimber	Poletimber	Sapling-seedling	Nonstocked[2]
	---------- *Thousand acres* ----------				
White-red-jack pine	64.0	56.7	7.3	...	...
Loblolly-shortleaf pine	1333.8	539.0	464.1	330.7	...
Softwood total	1397.8	595.7	471.4	330.7	...
Oak-pine	1591.5	612.6	565.0	414.0	...
Oak-hickory	9476.5	4765.1	3178.7	1532.7	...
Oak-gum-cypress	639.3	462.8	135.4	41.1	...
Elm-ash-cottonwood	43.0	30.8	7.3	5.0	...
Maple-beech-birch	111.4	54.2	39.8	17.4	...
Hardwood total	11861.8	5925.4	3926.2	2010.1	...
Nontyped[3]	5.7	...	...	...	5.7
All types	13265.2	6521.2	4397.5	2340.8	5.7

[1] Forest type is based on species plurality of all live trees. Mixed types that in combination contain a majority of hardwood stocking are hardwood types.

[2] Timberland less than 16.7 percent stocked.

[3] Timberland with no current stocking.

Table 10–*Number of live trees on timberland by species and diameter class, Tennessee Counties, 1989*

		Diameter class (inches at breast height)											
Species	All classes	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Shortleaf-loblolly pine	263268	65586	65919	53246	38211	21336	11752	5074	1484	434	159	66	...
Other yellow pines	273239	98659	53090	44485	35949	19662	12604	6053	2045	508	137	46	...
Eastern white-red pine	77301	48898	13458	3893	3443	2194	1778	1030	908	634	481	521	63
Eastern hemlock	62223	37865	12531	5007	2189	1434	1239	771	369	384	188	232	13
Cypress	1975	...	563	...	245	136	31	143	176	114	117	293	158
Other softwoods	431268	253757	105344	44368	16608	6871	2927	963	231	168	9	21	...
Total softwoods	1109272	504764	250905	151000	96646	51633	30331	14034	5212	2243	1092	1179	233
Select white oaks	505443	199075	122396	59261	40019	30902	20583	15195	8320	4682	2404	2430	177
Select red oaks	82545	21209	12272	9820	10655	8180	5962	5625	3128	2138	1509	1809	240
Other white oaks	311873	96909	56224	47592	37432	26624	17667	12525	7419	4025	2410	2719	327
Other red oaks	318112	104124	51028	41180	34557	29151	20799	15867	9172	5838	3172	2942	282
Hickory	592126	303884	120481	56164	44268	30835	17686	10090	4572	2205	1060	821	59
Yellow birch	3773	2300	955	406	...	35	...	54	...	...	...	22	2
Hard maple	340466	222873	60964	24093	12131	7976	5140	3533	1569	1034	514	517	122
Soft maple	751000	513788	129970	48663	26617	14302	7994	4144	2455	1412	751	806	98
Beech	100895	59293	15850	6869	5376	3770	2431	2215	1211	1285	696	1534	366
Sweetgum	201440	110707	35370	20020	13040	9157	5960	3380	2349	603	435	374	46
Tupelo-blackgum	500257	393171	62330	20851	10146	5608	3298	2274	1302	609	393	263	9
Ash	240970	139015	47129	22894	12475	8223	4948	2610	1752	959	577	361	28
Cottonwood-aspen	1314	...	602	274	...	48	62	21	78	55	22	69	82
Basswood	15348	11047	...	1009	810	886	503	362	320	228	102	78	4
Yellow-poplar	272756	132741	44099	24309	19616	14977	11983	9679	6448	4174	2448	2135	146
Black walnut	20065	4735	2892	3973	2841	2255	1632	922	459	176	112	64	4
Other hardwoods	1748545	1238028	314287	97939	46828	24641	11973	6949	3224	2087	1227	1141	223
Total hardwoods	6006928	3552898	1076848	485317	316812	217570	138622	95444	53779	31508	17832	18084	2215
Noncommercial	944143	656916	204131	57841	17570	4601	1851	780	264	79	71	39	...
All species	8060343	4714579	1531884	694158	431027	273805	170804	110258	59256	33829	18995	19301	2448

Table 11—*Number of growing-stock trees on timberland by species and diameter class, Tennessee Counties, 1989*

Species	All classes	Diameter class (inches at breast height) 1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Shortleaf-loblolly pine	235960	48368	58428	51933	37307	21056	11676	5074	1469	434	148	66	...
Other yellow pines	232120	73764	41725	41686	34960	19160	12351	5879	1979	443	137	36	...
Eastern white-red pine	72908	45376	12941	3730	3443	2127	1691	1030	890	623	481	511	63
Eastern hemlock	53991	31560	10936	4779	2189	1388	1212	771	352	376	188	227	13
Cypress	1810	...	563	...	170	136	31	118	139	97	117	293	146
Other softwoods	346839	202435	86513	36301	13854	4689	2131	642	139	119	9	8	...
Total softwoods	943628	401503	211106	138429	91924	48557	29093	13513	4968	2093	1081	1141	221
Select white oaks	385488	117791	97230	53082	38135	29727	19031	14366	7702	4226	2134	1980	84
Select red oaks	70158	12958	10568	9072	10283	7745	5784	5369	2999	2064	1437	1685	195
Other white oaks	232218	48647	40642	43227	34916	24682	15621	10741	6461	3408	1870	1838	163
Other red oaks	256130	65109	40086	38040	32941	27481	18649	14823	8281	5247	2760	2516	196
Hickory	410332	157578	98311	49944	41908	29355	16017	9221	4315	1930	995	709	48
Yellow birch	2415	1099	955	319	...	...	...	28	...	...	...	12	2
Hard maple	197076	108421	43190	18048	10461	7077	4219	2712	1340	789	457	323	39
Soft maple	408052	241807	87263	36541	19833	10323	5597	3104	1544	957	500	531	52
Beech	48014	21807	6828	4954	4501	3059	1832	1664	1004	913	473	837	143
Sweetgum	126742	54660	21469	17307	12173	8593	5717	3285	2221	538	413	320	46
Tupelo-blackgum	203089	126100	40775	16539	8452	4580	2827	1870	1018	509	220	195	4
Ash	126819	57022	26818	16764	9741	7126	4022	2176	1547	825	492	264	21
Cottonwood-aspen	1301	...	602	274	...	48	62	21	78	42	22	69	82
Basswood	5064	1545	...	658	758	668	503	362	286	138	82	64	...
Yellow-poplar	235511	103557	39908	22553	18864	14640	11685	9392	6299	4063	2406	2047	97
Black walnut	10767	545	1124	2664	1869	1946	1331	689	376	112	82	26	4
Other hardwoods	730566	454183	140123	62843	35732	18532	8371	5213	2265	1418	916	858	110
Total hardwoods	3449743	1572828	695892	392830	280567	195583	121269	85036	47738	27179	15259	14274	1287
All species	4393371	1974332	906998	531259	372490	244141	150362	98550	52706	29271	16339	15415	1508

Table 12–*Volume of growing stock on timberland by species and diameter class, Tennessee Counties, 1989*

Species	All classes	Diameter class (inches at breast height) 5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet										
Shortleaf-loblolly pine	1064.8	120.4	232.0	261.7	223.8	137.8	53.5	21.5	8.5	5.6	...
Other yellow pines	1115.6	132.8	250.9	244.7	234.7	154.5	68.4	19.0	8.0	2.7	...
Eastern white-red pine	254.3	8.0	19.3	23.2	28.1	25.0	31.4	30.1	28.8	49.5	11.0
Eastern hemlock	141.8	10.8	12.0	15.2	21.7	19.7	12.3	16.7	11.4	20.0	2.0
Cypress	81.4	...	1.2	2.1	0.4	2.7	4.7	4.8	6.7	31.3	27.6
Other softwoods	237.4	81.9	66.8	42.2	27.5	11.7	3.8	3.0	0.2	0.2	...
Total softwoods	2895.3	353.9	582.2	589.1	536.2	351.4	174.1	95.2	63.5	109.2	40.6
Select white oaks	2097.8	139.2	231.9	332.9	341.8	356.7	261.4	180.7	110.8	133.1	9.4
Select red oaks	837.1	23.6	65.1	85.8	104.2	135.0	100.8	88.2	76.7	130.0	27.9
Other white oaks	1572.5	108.1	192.9	250.1	252.8	231.5	188.8	127.9	88.2	114.5	17.7
Other red oaks	2049.7	101.5	193.7	288.9	305.0	346.8	252.5	217.5	142.3	174.9	26.6
Hickory	1608.5	120.7	241.6	324.2	301.4	243.2	157.7	91.8	58.0	61.2	8.6
Yellow birch	2.6	0.6	...	...	...	0.7	...	...	...	1.2	0.2
Hard maple	472.6	47.7	64.9	79.9	73.6	70.3	46.6	35.5	24.5	25.7	3.7
Soft maple	644.5	102.2	120.2	115.4	92.2	70.1	46.6	36.7	23.8	34.1	3.2
Beech	314.8	13.0	25.3	33.9	32.0	39.8	32.2	35.9	23.5	64.8	14.6
Sweetgum	584.9	38.7	71.7	100.4	113.4	91.2	83.7	28.1	23.7	27.5	6.5
Tupelo-blackgum	274.6	36.0	44.0	42.8	42.8	39.5	28.2	18.9	10.6	11.6	0.3
Ash	431.3	39.8	57.5	75.5	69.7	55.4	50.9	36.2	24.8	18.5	2.9
Cottonwood-aspen	32.6	0.4	...	0.4	1.2	0.7	3.4	2.2	1.5	7.0	15.8
Basswood	66.5	2.3	5.7	8.6	11.2	10.4	10.6	7.2	5.0	5.5	...
Yellow-poplar	1668.1	63.1	127.3	176.6	235.2	268.9	242.5	206.8	152.2	181.8	13.8
Black walnut	91.7	6.2	11.4	19.3	18.2	14.9	11.3	4.2	3.8	1.8	0.5
Other hardwoods	1037.6	150.3	195.5	188.0	135.7	119.0	71.3	54.4	49.3	61.0	13.0
Total hardwoods	13787.4	993.3	1648.7	2122.8	2130.4	2094.1	1588.3	1172.2	818.6	1054.1	164.8
All species	16682.7	1347.2	2231.0	2711.9	2666.6	2445.4	1762.4	1267.4	882.1	1163.3	205.4

Table 13—*Volume of growing stock in the saw-log portion of sawtimber[1] trees on timberland by species and diameter class, Tennessee Counties, 1989*

		Diameter class (inches at breast height)							
Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet								
Shortleaf-loblolly pine	606.7	209.0	196.2	122.9	47.4	18.8	7.6	4.9	...
Other yellow pines	618.4	196.2	200.8	136.4	59.5	16.5	6.7	2.2	...
Eastern white-red pine	202.1	18.3	24.5	22.0	29.2	27.4	26.1	44.3	10.2
Eastern hemlock	105.5	11.9	18.6	17.4	11.1	15.7	10.4	18.3	2.0
Cypress	74.5	1.7	0.3	2.1	3.9	4.2	6.3	29.5	26.5
Other softwoods	73.9	33.4	23.5	10.4	3.6	2.7	0.2	0.2	...
Total softwoods	1681.0	470.5	464.0	311.2	154.7	85.3	57.3	99.4	38.6
Select white oaks	1125.6	...	251.7	289.7	217.9	153.0	94.4	111.1	7.9
Select red oaks	546.2	...	77.5	110.0	84.3	74.8	64.9	110.7	24.0
Other white oaks	822.3	...	189.3	188.2	157.0	106.4	72.3	95.3	13.8
Other red oaks	1208.0	...	227.1	286.7	215.3	185.9	121.2	148.9	22.8
Hickory	746.2	...	225.8	200.7	133.1	76.8	51.0	51.3	7.5
Yellow birch	1.6	...	...	0.4	...	...	...	1.0	0.2
Hard maple	218.9	...	53.2	55.3	37.3	28.6	20.3	21.3	2.9
Soft maple	242.7	...	65.9	54.2	38.7	31.1	21.1	28.8	2.9
Beech	196.2	...	22.9	31.9	26.8	28.9	19.1	53.9	12.6
Sweetgum	305.9	...	80.1	75.7	72.6	25.2	21.2	25.4	5.6
Tupelo-blackgum	126.4	...	31.8	32.7	24.8	16.6	9.6	10.5	0.3
Ash	210.4	...	50.5	45.6	42.2	31.7	21.4	16.3	2.8
Cottonwood-aspen	28.9	...	1.0	0.6	3.0	2.0	1.3	6.5	14.5
Basswood	41.1	...	8.6	8.3	8.9	6.2	4.3	4.7	...
Yellow-poplar	1098.4	...	170.0	222.4	212.6	183.3	135.7	162.3	12.1
Black walnut	41.3	...	13.0	11.5	8.8	3.3	3.1	1.1	0.5
Other hardwoods	400.0	...	96.0	92.5	58.6	44.8	42.5	53.9	11.8
Total hardwoods	7359.8	...	1564.3	1706.5	1341.9	998.5	703.4	903.2	142.0
All species	9040.8	470.5	2028.3	2017.7	1496.6	1083.9	760.7	1002.6	180.6

[1] That part of the bole of sawtimber trees between a 1-foot stump and saw-log top.

Table 14–*Volume of sawtimber on timberland by species and diameter class, Tennessee Counties, 1989*

Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Shortleaf-loblolly pine	3509.8	1132.2	1139.1	739.8	295.8	122.0	48.2	32.8	...
Other yellow pines	3545.3	1058.2	1145.6	812.7	366.3	102.5	45.4	14.6	...
Eastern white-red pine	1187.2	94.3	133.0	124.2	166.2	166.2	158.4	280.1	64.9
Eastern hemlock	589.8	60.8	100.5	97.8	64.0	88.0	60.0	107.4	11.3
Cypress	414.0	9.3	1.1	11.1	23.1	22.6	34.7	170.7	141.5
Other softwoods	369.2	165.1	117.2	53.7	18.9	13.1	0.7	0.5	...
Total softwoods	9615.4	2519.9	2636.6	1839.1	934.3	514.4	347.3	606.1	217.7
Select white oaks	6667.0	...	1385.7	1666.3	1319.8	945.1	600.0	705.8	44.3
Select red oaks	3297.1	...	433.7	642.0	502.7	461.6	406.1	693.6	157.3
Other white oaks	4897.2	...	1051.8	1083.4	942.5	659.9	457.9	608.7	92.9
Other red oaks	7147.1	...	1229.8	1645.5	1275.2	1142.5	757.0	948.3	148.7
Hickory	4545.2	...	1294.7	1201.2	833.5	493.3	330.9	339.5	52.2
Yellow birch	10.8	...	...	2.2	...	...	...	7.3	1.3
Hard maple	1360.5	...	306.1	339.1	232.2	186.4	133.3	145.1	18.2
Soft maple	1402.0	...	362.4	311.8	230.5	183.9	129.3	171.4	12.7
Beech	1198.9	...	125.7	184.2	161.4	181.1	122.3	345.7	78.6
Sweetgum	1787.9	...	451.5	439.6	429.0	151.8	126.0	153.7	36.4
Tupelo-blackgum	723.1	...	169.4	182.1	147.2	99.2	59.3	64.6	1.4
Ash	1248.6	...	283.4	272.1	255.5	194.5	129.9	98.9	14.4
Cottonwood-aspen	186.6	...	5.5	3.9	19.2	11.9	7.9	44.2	94.2
Basswood	256.1	...	52.4	52.0	53.5	41.0	27.1	30.0	...
Yellow-poplar	6687.0	...	981.2	1318.7	1285.2	1132.3	854.8	1042.7	72.0
Black walnut	244.5	...	70.4	69.4	54.2	21.0	19.2	7.0	3.3
Other hardwoods	2338.6	...	527.3	534.4	344.9	269.9	264.1	323.7	74.3
Total hardwoods	43998.2	...	8731.0	9947.9	8086.3	6175.4	4425.1	5730.2	902.2
All species	53613.6	2519.9	11367.6	11787.1	9020.6	6689.8	4772.4	6336.3	1119.9

Table 15–Volume *of growing stock and sawtimber on timberland by county and species group, Tennessee Counties, 1989*

	Growing stock					Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Anderson	199.3	...	24.4	15.0	56.2	103.6	791.5	...	112.4	50.6	207.2	421.4
Bedford	50.8	...	...	4.4	19.8	26.7	141.2	...	...	4.6	61.6	75.0
Benton	175.9	13.4	0.4	0.7	33.4	128.0	444.8	11.1	1.0	1.6	67.9	363.2
Bledsoe	187.5	26.6	40.8	2.6	22.7	94.8	457.6	43.2	126.5	10.7	51.6	225.6
Blount	111.0	6.8	34.6	0.4	14.6	54.7	365.2	23.9	126.9	...	33.1	181.3
Bradley	113.9	...	51.3	0.9	13.1	48.5	422.9	...	184.5	3.5	28.2	206.7
Campbell	354.0	...	50.6	5.7	97.1	200.6	1335.9	...	172.5	19.7	344.0	799.5
Cannon	92.2	...	4.5	4.6	29.1	54.0	243.6	...	2.2	7.1	66.5	167.9
Carroll	252.5	7.1	10.1	1.5	95.3	138.5	804.9	31.6	49.2	2.3	267.5	454.3
Carter	277.6	...	28.3	13.7	87.1	148.5	959.1	...	107.8	56.3	340.2	454.7
Cheatam	145.8	...	0.4	4.8	27.7	112.9	440.0	...	1.9	12.1	85.2	340.9
Chester	104.0	10.8	18.7	1.1	29.3	44.1	296.3	37.9	76.2	1.9	62.8	117.5
Claiborne	196.3	...	9.1	2.4	53.2	131.6	653.3	...	37.1	2.0	181.2	433.0
Clay	88.6	...	0.7	2.7	12.1	73.1	212.9	...	4.8	3.9	23.2	181.0
Cocke	238.0	...	41.7	5.9	70.9	119.6	791.3	...	151.4	21.7	195.8	422.4
Coffee	154.3	...	...	...	28.4	125.9	486.6	...	...	...	81.2	405.4
Crockett	33.0	...	...	...	6.0	27.0	165.2	...	...	...	27.9	137.2
Cumberland	418.3	9.5	109.5	4.1	64.2	231.0	1276.9	2.0	422.3	13.4	160.9	678.2
Davidson	114.4	...	0.5	3.9	8.8	101.2	380.7	...	...	6.2	22.8	351.7
Decatur	206.5	17.8	3.0	3.9	45.0	136.9	672.3	78.6	10.1	11.7	124.2	447.7
De Kalb	166.8	...	...	13.6	57.9	95.4	523.5	...	...	21.9	238.1	263.5
Dickson	216.8	...	...	1.2	32.6	183.0	738.3	...	...	...	110.5	627.8
Dyer	51.5	...	...	...	34.5	17.0	225.9	...	...	...	154.2	71.7
Fayette	201.7	...	14.6	6.2	37.7	143.2	638.1	...	34.2	10.6	102.2	491.1
Fentress	363.5	10.5	102.6	15.3	65.2	170.0	1057.7	13.8	327.9	61.5	177.3	477.2
Franklin	175.7	...	...	4.4	16.5	154.8	574.5	...	...	6.3	64.9	503.2
Gibson	47.0	...	...	...	...	47.0	155.9	...	...	...	...	155.9
Giles	151.4	3.1	0.1	1.9	52.5	93.7	347.8	9.8	...	3.9	103.8	230.3
Grainger	156.2	...	15.2	3.1	50.6	87.4	522.3	...	47.2	6.6	184.4	284.0
Greene	246.8	...	35.9	5.7	68.2	136.9	856.0	...	119.6	9.0	262.4	465.0
Grundy	194.4	...	29.6	2.2	40.0	122.5	519.2	...	64.9	6.1	117.4	330.8
Hamblen	70.4	...	18.4	2.7	9.1	40.1	276.5	...	75.7	2.7	27.6	170.6
Hamilton	248.8	14.0	77.2	0.9	22.0	134.8	890.5	63.2	297.9	2.5	52.7	474.2
Hancock	65.3	...	1.5	2.2	15.8	45.9	213.2	...	9.7	1.2	43.0	159.2
Hardeman	297.7	28.1	25.3	5.3	76.2	162.9	955.3	108.3	87.7	10.9	222.3	526.2
Hardin	258.3	24.4	36.3	5.2	60.2	132.2	689.2	30.6	125.1	12.9	159.0	361.6
Hawkins	191.9	...	26.4	1.4	37.0	127.1	607.9	...	76.4	...	132.7	398.7
Haywood	122.5	...	...	...	43.0	79.5	488.5	...	...	...	157.0	331.5
Henderson	214.6	26.9	9.4	3.2	71.3	103.7	646.4	75.9	23.2	5.9	197.7	343.8
Henry	231.1	2.2	...	0.6	109.0	119.2	835.8	9.2	...	...	402.3	424.4
Hickman	345.6	8.1	4.8	0.7	56.0	276.0	906.3	29.1	6.7	3.2	164.2	703.1
Houston	113.9	...	...	0.5	21.7	91.8	359.3	...	...	1.6	60.0	297.6
Humphreys	272.4	...	1.7	1.8	43.4	225.5	783.6	...	8.4	4.4	116.9	653.9
Jackson	166.6	...	1.2	9.0	51.2	105.1	583.8	...	3.9	15.8	185.4	378.8
Jefferson	98.3	12.0	1.4	2.1	14.4	68.4	368.7	43.0	4.4	4.4	42.3	274.7
Johnson	193.1	0.4	22.1	7.8	51.3	111.6	608.2	...	91.5	27.6	141.9	347.2
Knox	169.6	...	35.8	3.9	50.0	79.9	628.8	...	105.5	7.2	206.2	310.0
Lake	72.1	...	...	38.8	12.6	20.7	346.7	...	...	200.2	53.5	92.9

Table 15–*Volume of growing stock and sawtimber on timberland by county and species group, Tennessee Counties, 1989 - Continued*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	- - - - - - - - - - - - - Million cubic feet - - - - - - - - - - - - -						*- - - - - - - - - - - - - - - Million board feet - - - - - - - - - - - -*					
Lauderdale	134.2	...	...	20.0	62.9	51.3	623.4	...	...	105.3	302.5	215.5
Lawrence	173.3	...	...	...	44.1	129.3	481.0	...	...	...	149.0	331.9
Lewis	164.9	...	1.6	...	20.2	143.0	430.5	...	4.9	...	59.1	366.5
Lincoln	114.2	...	...	9.7	31.5	73.0	276.6	...	...	5.1	60.1	211.4
Loudon	97.6	17.1	23.6	2.6	7.2	47.0	378.9	68.8	81.0	5.3	16.8	207.0
McMinn	215.0	32.6	74.1	1.2	37.1	69.9	670.0	79.5	227.8	...	137.8	224.8
McNairy	233.2	4.0	72.1	2.4	49.1	105.5	610.2	...	227.6	4.7	110.1	267.7
Macon	105.2	...	...	0.3	53.6	51.3	378.0	...	...	...	194.0	184.1
Madison	209.2	...	1.2	6.9	68.6	132.6	729.1	...	1.4	18.3	238.6	470.8
Marion	265.4	0.9	33.1	7.1	50.1	174.2	846.9	...	117.3	34.1	150.6	544.9
Marshall	51.7	...	...	5.9	10.1	35.6	153.6	...	...	6.9	25.4	121.3
Maury	108.3	...	...	0.5	35.5	72.3	241.8	...	...	...	75.5	166.4
Meigs	126.6	42.1	11.6	1.7	23.2	47.9	367.4	126.0	34.4	5.6	41.1	160.3
Monroe	477.4	2.4	185.0	14.1	88.9	187.0	1537.2	6.3	646.8	39.9	263.3	580.9
Montgomery	143.0	...	5.5	2.8	48.3	86.3	404.4	...	14.9	3.8	130.2	255.4
Moore	55.3	...	...	2.7	9.6	43.0	192.6	...	...	7.1	27.6	157.8
Morgan	368.7	1.2	86.3	2.0	94.9	184.4	1323.0	...	342.1	8.4	318.9	653.6
Obion	141.4	...	...	12.9	49.4	79.2	613.1	...	...	67.1	172.8	373.1
Overton	291.3	...	28.6	2.9	123.8	136.0	1072.8	...	140.7	4.6	451.7	475.8
Perry	247.9	...	1.8	5.6	28.0	212.5	628.9	...	6.6	7.0	84.5	530.8
Pickett	92.9	...	1.7	5.3	31.3	54.6	295.2	...	5.2	18.1	112.2	159.6
Polk	326.1	...	190.0	7.9	40.4	87.8	1193.8	...	743.1	24.1	114.3	312.2
Putnam	202.7	...	14.5	4.4	69.4	114.5	708.7	...	62.4	12.6	263.4	370.4
Rhea	180.1	15.5	25.8	2.8	46.1	90.0	510.4	33.1	65.5	10.3	137.7	263.8
Roane	228.7	14.8	31.3	...	57.9	124.7	733.5	73.4	121.8	...	191.5	346.9
Robertson	66.3	...	...	0.4	24.3	41.6	262.5	...	...	1.8	87.5	173.2
Rutherford	52.3	...	...	11.7	7.6	33.0	95.2	...	...	6.1	14.8	74.2
Scott	490.1	16.9	82.4	7.8	98.5	284.6	1565.4	64.3	298.4	34.2	266.3	902.3
Sequatchie	134.4	2.1	45.7	6.2	20.9	59.4	371.9	1.5	129.8	28.9	52.7	159.0
Sevier	183.5	...	63.0	6.1	29.2	85.2	623.9	...	224.5	22.8	76.0	300.5
Shelby	189.0	...	...	1.7	130.6	56.8	678.8	...	...	7.8	478.7	192.4
Smith	79.1	...	...	4.2	20.5	54.5	202.7	...	...	1.4	64.0	137.4
Stewart	236.4	...	...	6.2	63.1	167.0	770.5	...	...	22.0	177.5	571.0
Sullivan	160.0	...	31.6	1.6	30.4	96.4	488.7	...	120.8	1.3	92.0	274.6
Sumner	79.3	...	...	3.6	30.7	45.0	275.4	...	...	4.3	120.5	150.6
Tipton	76.6	...	...	...	45.0	31.6	280.7	...	...	...	153.6	127.1
Trousdale	25.3	...	...	4.8	7.8	12.8	49.8	...	...	0.5	18.2	31.1
Unicoi	170.2	...	35.4	11.1	53.9	69.8	619.0	...	176.0	47.0	174.4	221.6
Union	123.2	...	17.6	5.6	43.8	56.2	420.9	...	55.1	7.2	152.1	206.5
Van Buren	149.7	2.7	31.7	7.8	37.4	70.0	441.1	2.0	56.0	39.9	125.4	217.9
Warren	111.6	...	...	...	27.1	84.5	370.5	...	...	...	109.2	261.2
Washington	96.5	2.7	10.5	7.2	23.0	53.1	375.3	3.3	48.2	35.8	78.1	209.9
Wayne	334.0	5.8	15.8	1.4	40.9	270.1	798.2	...	36.8	1.7	81.4	678.3
Weakley	139.7	16.0	0.6	4.1	45.9	73.0	520.8	50.0	2.8	19.7	150.2	298.1
White	198.3	21.4	3.1	1.5	62.9	109.4	665.3	20.0	10.8	2.7	222.4	409.4
Williamson	163.7	...	1.6	13.0	53.0	96.2	545.3	...	3.3	20.1	201.1	320.8
Wilson	51.4	...	...	14.7	5.7	31.0	100.7	...	...	23.8	12.3	64.6
All counties	16682.7	419.9	2014.9	460.6	4097.2	9690.1	53613.6	1139.3	7103.0	1373.1	13050.6	30947.7

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 16–*Volume of timber on timberland by class of timber and species group, Tennessee Counties, 1989*

		Softwood			Hardwood	
		Pine				
Class of timber	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet					
Sawtimber trees:						
Saw-log portion	9040.8	202.2	1224.9	253.9	2186.5	5173.3
Upper-stem portion	1940.9	39.1	205.2	33.9	459.6	1203.1
Total	10981.7	241.3	1430.1	287.8	2646.1	6376.4
Poletimber trees	5701.0	178.5	584.8	172.7	1451.1	3313.7
All growing-stock trees	16682.7	419.9	2014.9	460.6	4097.2	9690.1
Rough trees:						
Sawtimber size	587.5	1.5	14.5	26.0	145.1	400.4
Poletimber size	664.7	3.0	13.7	21.7	182.8	443.5
Total	1252.3	4.6	28.2	47.7	327.9	843.9
Rotten trees:						
Sawtimber size	310.8	...	1.0	4.8	93.8	211.2
Poletimber size	33.4	...	...	0.5	13.0	19.9
Total	344.2	...	1.0	5.3	106.8	231.1
Salvable dead trees:						
Sawtimber size	68.8	2.3	21.8	0.7	12.5	31.6
Poletimber size	55.8	0.6	7.3	2.1	6.0	39.8
Total	124.6	2.8	29.1	2.8	18.5	71.4
All classes	18403.8	427.2	2073.3	516.3	4550.5	10836.5

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 17 – *Volume of live trees and growing stock on timberland by ownership class and species group, Tennessee Counties, 1989*

	Live trees						Growing stock					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet											
National forest	1077.4	2.4	272.4	30.7	249.3	522.7	1005.0	2.4	270.1	30.5	234.9	467.1
Other public	1531.8	42.2	160.5	107.8	400.5	820.9	1391.2	42.1	159.0	101.2	334.9	754.1
Forest industry	1311.5	128.2	150.3	30.5	269.0	733.5	1223.6	126.6	147.7	28.3	246.2	674.8
Forest industry-leased	34.2	3.3	0.6	0.3	7.6	22.4	30.8	3.1	0.6	0.2	7.3	19.5
Other private	14324.3	248.3	1460.4	344.3	3605.7	8665.6	13032.1	245.7	1437.6	300.4	3273.8	7774.6
All ownerships	18279.2	424.4	2044.1	513.5	4532.0	10765.1	16682.7	419.9	2014.9	460.6	4097.2	9690.1

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 18–*Average net annual growth of growing stock and sawtimber on timberland by county and species group, Tennessee Counties, 1989*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Anderson	8.2	...	...	0.4	4.1	3.7	40.2	...	...	2.1	17.1	20.9
Bedford	1.5	...	...	0.3	0.7	0.5	4.2	...	...	0.2	2.0	2.0
Benton	10.0	0.6	0.3	0.1	2.3	6.7	30.3	0.6	0.5	0.2	3.4	25.6
Bledsoe	10.6	2.0	1.8	0.1	1.5	5.2	26.0	1.4	6.1	0.4	3.6	14.5
Blount	2.0	0.4	-0.3	...	0.6	1.3	3.9	1.3	-1.5	...	1.8	2.3
Bradley	5.3	...	2.8	-0.3	0.8	2.1	25.4	...	13.1	-0.4	3.0	9.7
Campbell	10.2	...	0.8	0.2	4.4	4.8	56.9	...	4.6	1.4	20.0	30.8
Cannon	4.6	...	0.3	0.2	1.8	2.3	14.0	...	0.3	0.6	5.7	7.4
Carroll	12.7	0.4	0.2	...	5.4	6.7	51.4	2.3	0.9	-0.2	19.6	28.8
Carter	7.1	...	0.1	-0.4	4.1	3.3	33.6	...	3.4	-4.0	17.8	16.4
Cheatam	7.8	...	...	0.3	1.8	5.7	28.8	...	...	1.0	6.1	21.7
Chester	2.6	0.2	0.1	...	0.6	1.6	7.4	0.7	-1.1	0.1	1.6	6.1
Claiborne	8.4	...	-0.1	0.2	3.1	5.2	32.2	...	0.6	...	12.8	18.8
Clay	4.6	...	...	0.1	0.9	3.6	15.8	...	-0.2	0.1	2.5	13.4
Cocke	6.0	...	0.7	0.3	3.4	1.6	27.1	...	3.5	0.7	12.7	10.1
Coffee	4.8	...	...	...	1.3	3.6	19.3	...	...	...	3.8	15.5
Crockett	0.6	...	...	...	0.3	0.3	3.4	...	...	...	1.1	2.2
Cumberland	12.8	0.6	3.2	0.2	2.6	6.2	45.5	0.6	13.4	1.1	8.0	22.4
Davidson	4.2	...	0.1	0.2	0.5	3.4	11.2	...	...	0.7	0.9	9.5
Decatur	9.7	1.0	...	0.2	2.7	5.9	39.2	7.0	...	0.2	7.2	24.9
De Kalb	7.5	...	...	0.6	2.9	4.0	27.7	...	...	1.4	14.0	12.4
Dickson	7.8	...	...	0.1	1.6	6.1	42.0	...	...	...	6.5	35.5
Dyer	0.8	...	...	...	0.1	0.7	3.7	...	...	...	0.5	3.1
Fayette	10.5	...	0.8	0.1	2.5	7.0	38.9	...	2.9	0.6	7.3	28.0
Fentress	13.0	0.9	3.2	0.7	3.0	5.2	44.4	1.0	10.0	2.0	10.6	20.8
Franklin	4.3	...	...	0.2	0.6	3.5	17.9	...	...	0.8	3.3	13.7
Gibson	0.6	...	...	...	-0.4	1.0	5.0	...	...	...	-0.9	5.8
Giles	8.7	0.4	...	...	3.3	5.0	23.4	1.2	0.1	0.2	8.4	13.5
Grainger	8.5	...	0.6	0.2	2.6	5.0	37.4	...	1.8	1.1	12.3	22.3
Greene	12.2	...	1.7	-0.2	5.1	5.6	48.4	...	5.8	1.2	19.9	21.5
Grundy	8.5	...	1.4	...	1.9	5.2	25.0	...	3.8	0.2	5.0	16.0
Hamblen	3.4	...	-0.4	...	0.6	3.2	16.8	...	0.6	...	3.1	13.0
Hamilton	9.2	0.9	2.1	0.1	1.0	5.0	34.9	3.3	12.6	0.3	0.7	18.0
Hancock	3.5	...	...	...	0.9	2.5	15.4	...	0.2	...	5.3	9.8
Hardeman	11.1	1.6	1.1	0.6	2.0	5.8	36.8	6.2	4.2	1.8	3.2	21.4
Hardin	12.0	3.4	0.6	0.2	2.5	5.3	37.8	10.2	2.9	0.2	7.6	16.9
Hawkins	3.7	...	0.3	0.2	0.9	2.4	17.3	...	0.1	...	4.1	13.1
Haywood	4.3	...	...	...	2.3	1.9	10.2	...	...	...	6.6	3.6
Henderson	7.6	1.0	0.1	...	2.7	3.9	31.4	2.8	0.4	...	11.3	16.9
Henry	10.3	...	...	...	6.6	3.8	53.0	...	...	...	35.7	17.3
Hickman	7.2	...	0.1	0.1	1.5	5.6	34.9	0.5	0.3	0.3	5.0	28.7
Houston	3.7	...	...	0.1	0.9	2.7	15.7	...	...	0.2	3.8	11.7
Humphreys	8.1	...	0.1	...	2.0	6.0	34.1	...	0.7	-0.3	7.1	26.6
Jackson	5.9	...	0.1	0.2	2.1	3.6	23.5	...	0.3	0.6	7.8	14.8
Jefferson	6.4	...	0.6	...	1.2	4.6	25.2	...	5.2	0.2	3.4	16.4
Johnson	10.1	...	0.8	0.7	2.0	6.5	42.7	...	3.1	2.6	9.8	27.1
Knox	5.9	...	0.9	0.1	1.6	3.3	22.4	...	1.3	0.8	9.9	10.4
Lake	...	...	...	...	...	...	...	...	...	...	...	...

Table 18–*Average net annual growth of growing stock and sawtimber on timberland by county and species group, Tennessee Counties, 1989 - Continued*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Lauderdale	4.7	...	...	0.6	2.4	1.7	17.0	...	...	2.6	7.7	6.8
Lawrence	5.5	...	...	...	1.5	4.0	22.3	...	0.3	...	7.6	14.4
Lewis	6.4	...	0.1	...	0.7	5.6	23.8	...	0.1	...	3.0	20.7
Lincoln	4.3	...	...	0.2	1.6	2.5	14.2	...	...	0.4	3.3	10.4
Loudon	4.9	0.8	1.6	0.2	0.4	2.0	24.4	5.9	6.5	0.6	0.2	11.2
McMinn	9.5	1.5	3.3	...	1.9	2.7	36.8	5.0	14.8	...	8.3	8.7
McNairy	12.1	1.4	1.8	0.3	3.6	5.2	37.2	0.9	5.8	0.5	10.4	19.5
Macon	4.3	...	...	...	2.7	1.6	22.3	...	...	...	13.3	8.9
Madison	9.2	...	0.1	0.4	3.1	5.6	39.8	...	0.2	1.1	14.1	24.4
Marion	9.6	0.1	1.0	0.2	2.2	6.1	28.2	...	0.5	0.4	5.7	21.7
Marshall	1.1	...	...	0.4	0.3	0.5	2.9	...	...	0.7	0.7	1.5
Maury	3.1	...	...	...	1.2	1.9	8.8	...	...	...	4.2	4.6
Meigs	5.3	1.8	...	...	1.3	2.2	26.6	11.3	-0.3	0.2	4.6	10.8
Monroe	17.0	...	6.8	0.6	2.8	6.7	67.6	...	31.2	2.4	10.0	24.0
Montgomery	7.8	...	0.4	0.1	2.8	4.5	27.6	...	0.7	0.2	10.2	16.5
Moore	1.5	...	...	...	0.5	1.0	4.7	...	...	-0.3	1.3	3.7
Morgan	17.9	...	4.6	0.1	4.8	8.4	79.1	...	20.2	0.7	18.2	40.1
Obion	5.9	...	...	0.3	1.7	3.9	32.8	...	...	1.1	8.5	23.1
Overton	10.3	...	0.8	0.1	4.4	5.0	52.9	...	4.5	0.4	23.9	24.1
Perry	11.2	...	0.1	0.2	1.6	9.3	43.3	...	0.7	0.7	7.5	34.4
Pickett	2.5	...	0.1	0.2	0.9	1.3	7.9	...	0.4	0.6	3.7	3.2
Polk	6.1	0.3	4.1	0.1	1.2	0.4	37.1	0.9	18.1	0.2	7.0	10.9
Putnam	10.5	...	...	0.3	4.0	6.1	47.8	...	0.4	1.1	19.3	26.9
Rhea	9.2	0.8	1.5	...	2.3	4.5	32.4	3.2	3.2	0.5	7.9	17.6
Roane	6.9	...	1.7	...	2.4	2.9	28.8	1.2	7.9	...	8.2	11.5
Robertson	3.5	...	...	...	1.5	2.0	17.2	...	...	...	6.8	10.3
Rutherford	2.6	...	...	0.8	0.4	1.4	6.6	...	...	0.7	1.0	4.9
Scott	16.9	0.9	1.1	0.2	4.0	10.7	73.4	5.0	8.7	1.2	11.7	46.9
Sequatchie	3.8	0.5	1.6	0.1	0.7	0.9	10.3	1.7	3.9	0.4	2.3	2.0
Sevier	4.8	...	0.7	0.3	1.9	1.9	22.9	...	8.9	1.6	4.3	8.1
Shelby	12.7	...	...	...	8.8	3.8	52.6	...	...	0.1	38.6	14.0
Smith	4.0	...	...	0.4	1.1	2.5	15.3	...	...	0.2	4.9	10.2
Stewart	8.0	...	...	...	2.9	5.1	31.4	...	...	-0.1	11.3	20.2
Sullivan	2.6	...	0.6	0.1	0.7	1.3	14.2	...	2.7	...	1.5	10.1
Sumner	3.2	...	...	0.2	1.4	1.6	15.4	...	...	0.5	5.8	9.2
Tipton	4.3	...	...	...	2.1	2.2	17.4	...	...	...	8.0	9.4
Trousdale	0.8	...	...	0.4	...	0.4	2.2	...	...	...	0.4	1.7
Unicoi	6.5	...	1.7	0.1	2.1	2.6	30.2	...	12.7	0.4	7.0	10.1
Union	3.2	...	-0.3	0.1	1.5	1.8	13.5	...	-0.2	1.0	4.6	8.1
Van Buren	6.7	0.3	1.5	0.2	2.1	2.6	18.5	0.2	2.7	1.1	6.9	7.6
Warren	4.1	...	...	-0.1	0.9	3.3	17.3	...	...	-0.3	5.2	12.4
Washington	2.2	...	0.3	0.1	0.9	0.8	14.5	...	2.0	1.0	3.7	7.9
Wayne	9.3	0.3	1.1	0.1	1.3	6.5	35.6	1.2	1.1	...	3.9	29.3
Weakley	3.6	0.6	0.1	...	-0.2	3.1	16.9	1.2	0.1	...	-0.2	15.7
White	11.1	2.0	0.1	0.1	3.5	5.4	39.3	2.1	0.3	0.3	12.2	24.4
Williamson	6.5	...	0.1	0.6	2.2	3.6	25.8	...	0.4	1.0	10.2	14.3
Wilson	1.9	...	...	0.4	0.2	1.2	6.6	...	...	1.5	1.3	3.8
All counties	637.4	24.6	60.7	14.5	189.1	348.5	2545.0	78.9	258.4	43.1	722.7	1441.8

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 19–*Average net annual removals of growing stock and sawtimber on timberland by county and species group, Tennessee Counties, 1989*

County	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Anderson	2.5	...	0.2	0.1	0.9	1.3	5.7	...	0.9	...	2.5	2.3
Bedford	0.4	...	...	0.1	0.1	0.3	1.2	...	...	...	0.4	0.7
Benton	1.9	0.1	0.6	...	...	1.2	6.3	0.4	0.9	...	...	5.0
Bledsoe	0.5	...	0.3	...	...	0.2	1.0	...	0.6	...	...	0.4
Blount	1.8	...	0.9	...	0.2	0.7	9.2	...	4.6	...	1.2	3.4
Bradley	8.0	...	6.3	...	0.5	1.1	17.6	...	15.1	...	0.5	2.1
Campbell	2.5	...	0.2	...	0.7	1.6	10.4	...	0.9	...	3.3	6.2
Cannon	1.5	...	...	...	1.1	0.5	6.8	...	...	...	5.0	1.8
Carroll	0.6	...	0.1	...	...	0.4	2.0	...	0.2	...	...	1.8
Carter	3.4	...	0.1	...	0.8	2.5	12.4	...	...	...	2.1	10.3
Cheatam	2.1	...	...	...	0.2	1.8	7.6	...	0.2	...	0.6	6.8
Chester	0.2	0.2	...	...	...	0.1	0.9	0.7	...	...	...	0.2
Claiborne	2.5	...	0.5	...	1.3	0.7	11.3	...	1.6	...	6.3	3.5
Clay	2.3	...	...	...	0.1	2.2	9.9	...	...	...	0.6	9.3
Cocke	3.2	...	1.7	0.1	0.5	0.9	16.2	...	10.0	...	2.3	3.9
Coffee	2.5	...	...	...	0.4	2.1	11.5	...	...	...	1.7	9.8
Crockett	0.3	...	...	...	...	0.3	1.6	...	...	...	...	1.6
Cumberland	5.7	0.5	0.9	...	0.7	3.5	21.2	0.6	4.0	...	2.9	13.6
Davidson	2.3	...	...	0.1	0.2	2.0	9.6	...	...	0.3	0.3	8.9
Decatur	2.9	...	...	...	0.6	2.3	12.8	...	...	...	2.3	10.5
De Kalb	0.3	...	...	...	0.2	0.2	2.1	...	...	...	1.1	1.0
Dickson	1.5	...	...	...	0.2	1.4	6.8	...	...	...	0.8	6.0
Dyer	0.8	...	...	...	0.4	0.4	2.8	...	...	...	1.5	1.3
Fayette	0.9	...	...	...	...	0.8	2.7	...	...	...	...	2.7
Fentress	3.4	...	1.6	0.1	0.5	1.2	13.4	...	5.7	0.4	1.3	6.0
Franklin	5.5	...	...	0.2	0.2	5.2	27.0	...	...	0.5	1.4	25.1
Gibson	1.4	...	...	...	0.2	1.1	6.2	...	...	...	0.5	5.6
Giles	3.1	...	0.1	...	1.0	2.0	10.9	...	0.3	...	3.3	7.2
Grainger	0.3	...	...	0.1	...	0.2	1.8	...	...	0.4	...	1.4
Greene	1.9	...	...	...	0.9	1.0	10.2	...	...	...	6.1	4.1
Grundy	5.2	...	1.0	...	0.4	3.7	15.7	...	2.3	...	1.6	11.8
Hamblen	...	...	...	...	...	...	...	...	...	...	...	...
Hamilton	2.2	1.6	0.4	...	...	0.2	5.9	4.4	1.1	...	...	0.4
Hancock	2.5	...	...	...	2.1	0.4	12.9	...	...	...	12.9	...
Hardeman	4.6	...	0.1	0.2	1.9	2.4	16.9	...	0.3	1.1	7.1	8.4
Hardin	6.1	1.7	1.6	...	0.5	2.3	26.5	4.7	9.3	...	2.0	10.6
Hawkins	0.4	...	...	...	0.4	...	2.1	...	...	...	2.1	...
Haywood	1.3	...	...	...	0.2	1.1	5.0	...	...	...	1.2	3.8
Henderson	3.4	...	...	0.1	1.6	1.7	12.3	...	...	...	4.6	7.7
Henry	1.6	...	...	...	0.9	0.7	5.4	...	...	...	2.1	3.3
Hickman	5.5	...	...	0.1	0.9	4.5	22.2	...	...	0.3	2.8	19.1
Houston	...	...	...	...	...	...	...	...	...	...	...	...
Humphreys	3.2	...	...	0.1	0.4	2.8	12.8	...	...	...	1.6	11.3
Jackson	0.7	...	...	...	...	0.7	4.0	...	...	...	...	4.0
Jefferson	0.6	...	...	0.4	0.2	...	1.8	...	...	1.0	0.8	...
Johnson	0.4	...	...	...	0.2	0.2	1.9	...	...	...	0.6	1.2
Knox	2.1	...	0.8	...	...	1.3	8.2	...	2.4	...	...	5.8
Lake	2.1	...	...	...	1.9	0.2	9.8	...	...	...	9.2	0.7

Table 19–*Average net annual removals of growing stock and sawtimber on timberland by county and species group, Tennessee Counties, 1989 - Continued*

County	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Lauderdale	0.3	...	...	...	0.3	...	1.0	...	...	...	1.0	...
Lawrence	5.4	...	0.5	...	1.3	3.5	21.1	...	1.1	...	6.9	13.1
Lewis	3.5	...	0.1	...	0.1	3.2	8.3	...	0.5	...	0.5	7.3
Lincoln	0.7	...	...	0.2	0.2	0.3	2.0	...	...	0.2	0.6	1.3
Loudon	1.1	...	0.2	0.2	0.1	0.6	3.5	...	0.7	0.4	0.3	2.2
McMinn	1.8	0.9	0.9	...	...	...	5.3	2.1	3.2	...	...	...
McNairy	6.1	0.8	1.8	0.1	1.1	2.3	23.5	...	7.8	0.4	4.7	10.6
Macon	0.4	...	...	...	0.1	0.3	1.3	...	...	...	0.6	0.7
Madison	1.6	...	...	...	0.5	1.2	7.5	...	...	...	2.2	5.3
Marion	4.0	...	0.6	...	0.4	2.9	15.6	...	...	...	1.5	14.1
Marshall	1.1	...	...	0.2	0.2	0.6	4.5	...	...	0.3	0.8	3.4
Maury	2.4	...	...	...	0.7	1.7	10.0	...	...	...	2.3	7.7
Meigs	0.2	...	...	...	...	0.2	...	...	...	...	...	...
Monroe	7.4	1.5	3.4	0.5	0.1	2.0	22.5	4.3	11.2	2.1	...	4.9
Montgomery	1.5	...	...	...	0.1	1.4	7.1	...	...	...	0.4	6.7
Moore	...	...	...	...	...	...	...	...	...	...	...	...
Morgan	3.4	...	0.4	...	1.7	1.3	10.7	...	1.7	...	4.5	4.6
Obion	3.2	...	...	...	0.2	3.1	15.2	...	...	...	0.5	14.7
Overton	1.5	...	...	...	0.2	1.3	6.4	...	...	...	...	6.4
Perry	4.9	...	...	...	0.8	4.1	20.8	...	...	...	3.4	17.4
Pickett	0.2	...	0.2	...	...	...	0.4	...	0.4	...	...	...
Polk	6.1	2.2	3.2	...	0.3	0.4	20.8	3.5	15.8	...	0.8	0.7
Putnam	3.1	...	...	...	1.2	1.9	14.2	...	...	...	6.1	8.2
Rhea	1.7	...	0.2	...	0.2	1.3	4.7	...	0.8	...	0.5	3.3
Roane	1.5	0.3	1.2	...	...	...	4.7	0.6	4.1	...	...	...
Robertson	2.0	...	...	...	0.1	1.8	9.0	...	...	...	0.4	8.6
Rutherford	0.3	...	...	...	...	0.2	0.7	...	...	...	...	0.7
Scott	5.3	...	2.3	0.1	1.4	1.6	20.4	...	9.2	0.4	5.0	5.8
Sequatchie	0.6	...	0.1	...	...	0.4	1.1	...	...	...	...	1.1
Sevier	0.2	...	0.1	...	...	0.1	0.8	...	0.4	...	...	0.4
Shelby	...	...	...	...	...	...	...	...	...	...	...	...
Smith	0.9	...	...	...	...	0.8	2.1	...	...	...	...	2.1
Stewart	4.4	...	...	...	1.0	3.5	22.2	...	...	...	4.2	18.0
Sullivan	0.1	...	...	...	...	0.1	0.3	...	...	...	...	0.3
Sumner	1.7	...	...	...	0.7	1.0	5.5	...	...	...	1.3	4.2
Tipton	0.8	...	...	...	...	0.8	4.6	...	...	...	...	4.6
Trousdale	0.1	...	...	...	0.1	0.1	0.4	...	...	...	0.4	...
Unicoi	3.0	...	0.1	...	0.9	2.0	8.0	...	...	...	3.4	4.6
Union	0.1	...	...	...	0.1	...	...	...	...	...	...	...
Van Buren	1.9	...	0.4	...	0.4	1.1	8.1	...	0.9	...	1.8	5.4
Warren	2.2	...	...	...	0.6	1.5	9.4	...	...	...	3.5	5.9
Washington	...	...	...	...	...	...	...	...	...	...	...	...
Wayne	13.5	3.0	0.7	...	0.8	9.1	38.9	7.2	2.2	...	2.6	26.9
Weakley	5.2	2.7	...	...	1.2	1.4	17.3	5.0	...	...	4.9	7.5
White	3.8	...	0.1	...	1.1	2.6	18.1	...	...	...	6.2	11.9
Williamson	1.0	...	...	0.1	0.2	0.7	3.2	...	...	0.6	0.3	2.2
Wilson	1.5	...	...	0.3	0.6	0.6	5.7	...	...	0.7	2.6	2.4
All counties	219.4	15.3	33.8	3.1	42.3	124.9	829.4	33.4	120.3	9.1	171.0	495.6

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums; yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 20–*Average net annual growth and average annual removals of growing stock on timberland by species, Tennessee Counties, 1989*

Species	Growth	Removals
	Million cubic feet	
Yellow pines	75.4	47.7
Eastern white-red pines	9.9	1.4
Other softwoods	14.5	3.1
Total softwoods	99.8	52.2
Select white-red oaks	108.9	42.1
Other white-red oaks	126.3	47.2
Hickory	45.5	20.6
Yellow birch	0.2	0.9
Hard maple	26.1	4.2
Sweetgum	28.7	5.4
Ash-walnut-black cherry	25.2	5.2
Yellow-poplar	82.7	20.9
Other hardwoods	94.0	20.7
Total hardwoods	537.6	167.2
All species	637.4	219.4

Table 21–*Average net annual growth and average annual removals of sawtimber on timberland by species, Tennessee Counties, 1989*

Species	Growth	Removals
	Million board feet	
Yellow pines	286.8	146.8
Eastern white-red pines	50.5	6.9
Other softwoods	43.1	9.1
Total softwoods	380.5	162.8
Select white-red oaks	475.4	179.4
Other white-red oaks	540.1	186.7
Hickory	171.1	78.9
Yellow birch	0.4	3.3
Hard maple	89.9	18.3
Sweetgum	108.4	20.7
Ash-walnut-black cherry	83.9	18.0
Yellow-poplar	384.6	101.4
Other hardwoods	310.8	60.1
Total hardwoods	2164.6	666.6
All species	2545.0	829.4

Table 22–*Average annual mortality of growing stock and sawtimber on timberland by species, Tennessee Counties, 1989*

Species	Growing stock	Sawtimber
	Million cubic feet	*Million board feet*
Yellow pines	28.2	75.6
Eastern white-red pines	1.2	5.4
Other softwoods	3.4	6.4
Total softwoods	32.8	87.4
Select white-red oaks	16.4	44.3
Other white-red oaks	39.0	94.4
Hickory	15.6	35.9
Hard maple	1.2	1.7
Sweetgum	5.8	19.1
Ash-walnut-black cherry	4.0	6.4
Yellow-poplar	5.2	13.8
Other hardwoods	26.4	56.2
Total hardwoods	113.6	271.7
All species	146.3	359.1

Table 23–*Average net annual growth and average annual removals of growing stock on timberland by ownership class and species group, Tennessee Counties, 1989*

	Growth						Removals					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet											
National forest	24.4	...	5.3	0.3	8.1	10.7	14.3	...	5.0	0.4	2.6	6.3
Other public	36.4	0.9	2.7	1.3	10.4	21.2	4.5	0.3	0.3	0.1	1.3	2.5
Forest industry	52.5	12.9	6.6	1.2	8.5	23.1	28.9	3.6	4.1	0.2	3.4	17.6
Forest industry-leased	2.8	0.2	...	...	0.8	1.8	0.5	...	...	...	0.1	0.5
Other private	521.2	10.5	46.0	11.7	161.3	291.8	171.2	11.4	24.4	2.4	35.0	98.0
All ownerships	637.4	24.6	60.7	14.5	189.1	348.5	219.4	15.3	33.8	3.1	42.3	124.9

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 24–*Average net annual growth and average annual removals of sawtimber on timberland by ownership class and species group, Tennessee Counties, 1989*

	Growth						Removals					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million board feet											
National forest	120.4	...	32.1	1.0	32.6	54.6	51.9	...	20.1	2.1	10.2	19.5
Other public	154.6	1.8	12.6	4.9	41.5	93.8	16.2	0.6	1.4	0.4	3.5	10.3
Forest industry	151.6	19.9	15.1	5.6	26.1	85.0	87.3	7.1	13.3	1.2	10.9	54.9
Forest industry-leased	11.6	0.8	...	...	2.4	8.3	2.6	...	...	...	0.3	2.4
Other private	2106.8	56.4	198.6	31.6	620.1	1200.0	671.4	25.7	85.6	5.3	146.2	408.6
All ownerships	2545.0	78.9	258.4	43.1	722.7	1441.8	829.4	33.4	120.3	9.1	171.0	495.6

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 25–*Volume of sawtimber on timberland by species and tree grade, Tennessee Counties, 1989*

Species	All grades	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
	Million board feet					
Yellow pines	7055.1	735.3	777.7	5428.4	...	113.6
Cypress	414.0	97.0	108.2	204.9	...	4.0
Redcedar	369.2	337.1	...	...	...	32.1
Other softwoods	1777.0	219.8	463.4	1017.0	19.2	57.7
Total softwoods	9615.4	1389.2	1349.3	6650.3	19.2	207.4
Select white-red oaks	9964.1	1073.0	2204.3	4337.4	1845.6	503.7
Other white-red oaks	12044.3	988.2	2091.6	5413.1	2811.3	740.1
Hickory	4545.2	271.2	831.9	2223.6	939.9	278.7
Yellow birch	10.8	...	...	7.0	3.8	...
Hard maple	1360.5	42.6	167.1	636.1	401.2	113.6
Sweetgum	1787.9	172.5	356.1	849.8	282.5	127.1
Tupelo and blackgum	723.1	60.0	103.8	307.5	145.9	105.9
Ash-walnut-black cherry	1677.6	183.5	430.7	702.6	207.5	153.4
Yellow-poplar	6687.0	999.2	1395.6	2642.7	1339.9	309.6
Other hardwoods	5197.8	386.7	606.4	1810.5	1678.4	715.7
Total hardwoods	43998.2	4176.9	8187.4	18930.3	9655.9	3047.7
All species	53613.6	5566.1	9536.8	25580.5	9675.0	3255.1

Supplemental Tables 26-47

Table 26–*Area of timberland by stand age, forest type group and type of regeneration, Tennessee Counties, 1989*

Stand age class	Pine		Oak-pine		Other hardwood types	
	Artificial	Natural	Artificial	Natural	Artificial	Natural
	Thousand acres					
1-10	87.1	24.7	28.6	41.4	35.9	132.2
11-20	77.5	30.3	22.4	10.7	6.7	41.7
21-30	57.0	10.7	9.5	...	5.8	22.0
31-40	57.3	23.1	...	...	5.9	...
41-50	8.6	5.8	5.9	...	...	...
>50	6.2	3.6	5.8	...	...	6.1
Mixed	63.3	942.6	28.3	1438.9	6.6	10007.3
Total	357.0	1040.7	100.5	1491.0	60.9	10209.3

Table 27 – *Volume of softwood growing stock on timberland by county and forest type group, Tennessee Counties, 1989*

County	Total	Forest type group							
		White-red jack pine	Loblolly-shortleaf[1] pine		Oak-[2] pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood	Maple-beech-birch
			Planted	Natural					
	Million cubic feet								
Anderson	39.4	...	...	16.9	8.9	13.6	...	...	...
Bedford	4.4	...	...	3.5	0.5	...	0.4	...	...
Benton	14.5	...	12.0	...	2.0	0.4	...	...	...
Bledsoe	70.0	...	19.2	28.3	12.6	9.9	...	...	...
Blount	41.7	6.1	6.8	7.7	15.7	5.4	...	...	...
Bradley	52.2	...	...	48.2	...	4.0	...	...	...
Campbell	56.4	...	...	25.1	21.9	9.3	...	...	...
Cannon	9.1	...	...	2.8	5.5	0.8	...	...	...
Carroll	18.7	...	7.1	...	5.7	5.9	...	...	...
Carter	42.0	...	...	4.1	20.1	16.8	...	...	1.0
Cheatam	5.2	...	...	...	...	5.2	...	...	...
Chester	30.6	...	9.5	2.0	16.4	2.8	...	...	...
Claiborne	11.5	...	...	2.2	5.9	3.4	...	...	...
Clay	3.4	...	...	...	1.2	2.3	...	...	...
Cocke	47.6	...	...	19.2	14.5	13.9	...	...	...
Coffee	...	...	...	...	...	...	...	...	...
Crockett	...	...	...	...	...	...	...	...	...
Cumberland	123.1	8.9	9.5	38.1	36.9	29.7	...	...	...
Davidson	4.4	...	...	...	1.3	3.1	...	...	...
Decatur	24.7	...	17.8	...	3.3	3.6	...	...	...
De Kalb	13.6	...	...	5.3	8.0	0.3	...	...	...
Dickson	1.2	...	...	...	1.2	...	...	...	...
Dyer	...	...	...	...	...	...	...	...	...
Fayette	20.7	...	...	14.3	2.7	3.7	...	...	...
Fentress	128.4	...	10.5	48.9	35.3	33.7	...	...	...
Franklin	4.4	...	...	...	2.5	1.9	...	...	...
Gibson	...	...	...	...	...	...	...	...	...
Giles	5.1	3.5	...	0.2	...	1.4	...	...	...
Grainger	18.2	...	...	...	8.4	9.8	...	...	...
Greene	41.6	...	...	20.3	14.1	7.2	...	...	...
Grundy	31.9	...	...	21.3	2.4	8.1	...	...	...
Hamblen	21.1	...	...	17.1	3.6	0.5	...	...	...
Hamilton	92.0	...	14.0	29.5	31.0	17.5	...	...	...
Hancock	3.6	...	...	...	2.2	1.5	...	...	...
Hardeman	58.6	...	26.7	15.4	7.6	6.9	2.1	...	...
Hardin	66.0	...	21.9	14.7	20.6	7.8	1.0	...	...
Hawkins	27.8	...	...	9.4	13.9	4.5	...	...	...
Haywood	...	...	...	...	...	...	...	...	...
Henderson	39.5	...	26.9	10.7	1.3	0.3	0.2	...	...
Henry	2.9	...	2.2	...	...	0.6	...	...	...
Hickman	13.7	...	8.9	...	...	4.8	...	...	...
Houston	0.5	...	...	...	...	0.5	...	...	...
Humphreys	3.5	...	...	...	...	3.5	...	...	...
Jackson	10.2	...	...	...	9.1	1.1	...	...	...
Jefferson	15.5	...	12.9	...	0.8	1.8	...	...	...
Johnson	30.2	...	...	...	13.7	16.1	...	...	0.4
Knox	39.7	...	...	10.3	21.9	7.5	...	...	...
Lake	38.8	...	...	...	...	...	38.8	...	...
Lauderdale	20.0	...	...	...	...	...	16.6	3.4	...
Lawrence	...	...	...	...	...	...	...	...	...
Lewis	1.6	...	...	...	...	1.6	...	...	...
Lincoln	9.7	...	...	7.1	1.1	1.6	...	...	...
Loudon	43.3	...	17.1	19.1	7.0	...	...	...	...
McMinn	107.9	...	32.6	58.7	11.3	5.4	...	...	...
McNairy	78.5	...	3.8	54.7	15.7	3.7	0.6	...	...
Macon	0.3	...	...	...	...	0.3	...	...	...
Madison	8.1	...	...	3.2	2.3	1.8	0.8	...	...
Marion	41.1	...	0.9	...	18.4	21.8	...	...	...
Marshall	5.9	...	...	2.4	1.5	2.0	...	...	...
Maury	0.5	...	...	0.3	...	0.2	...	...	...
Meigs	55.5	...	32.0	...	15.2	8.2	...	...	...
Monroe	201.5	11.1	...	105.4	53.7	30.9	...	...	0.4
Montgomery	8.4	...	...	...	4.8	3.6	...	...	...
Moore	2.7	...	...	...	...	2.7	...	...	...
Morgan	89.5	...	1.2	...	57.1	31.2	...	...	...
Obion	12.9	...	...	...	...	...	12.9	...	...
Overton	31.5	...	...	15.4	9.5	6.6	...	...	...

Table 27 – *Volume of softwood growing stock on timberland by county and forest type group, Tennessee Counties, 1989 - Continue*

County	Total	Forest type group White-red jack pine	Loblolly-shortleaf[1] pine Planted	 Natural	Oak-[2] pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood	Maple-beech-birch
	Million cubic feet								
Perry	7.4	...	...	2.9	0.4	4.2	...	...	...
Pickett	7.0	...	...	...	...	7.0	...	...	...
Polk	197.9	34.0	...	117.6	34.2	10.4	...	...	1.7
Putnam	18.9	...	...	...	12.6	6.2	...	...	...
Rhea	44.1	...	11.4	2.2	26.0	4.6	...	...	...
Roane	46.1	...	8.3	11.8	16.6	9.2	...	...	...
Robertson	0.4	...	...	...	...	0.4	...	...	...
Rutherford	11.7	...	...	7.3	3.8	0.7	...	...	...
Scott	107.1	16.9	...	18.4	35.2	36.6	...	...	...
Sequatchie	54.1	6.0	2.1	30.9	...	15.0	...	...	...
Sevier	69.1	...	...	14.4	45.8	8.9	...	...	...
Shelby	1.7	...	...	...	...	0.4	1.3	...	...
Smith	4.2	...	...	...	1.4	2.8	...	...	...
Stewart	6.2	...	...	5.4	...	0.8	...	...	...
Sullivan	33.2	13.2	...	5.7	9.6	4.7	...	...	...
Sumner	3.6	...	...	3.6	...	...	...	...	...
Tipton	...	...	...	...	...	...	...	...	...
Trousdale	4.8	...	...	...	3.1	1.7	...	...	...
Unicoi	46.5	13.1	...	...	18.8	14.6	...	...	...
Union	23.2	...	...	2.0	17.3	4.0	...	...	...
Van Buren	42.2	7.8	2.7	18.4	7.4	5.9	...	...	...
Warren	...	...	...	...	...	...	...	...	...
Washington	20.3	...	...	...	8.6	11.7	...	...	...
Wayne	23.0	...	5.1	6.9	3.2	7.9	...	...	...
Weakley	20.8	...	16.0	...	...	0.9	3.8	...	...
White	26.0	...	21.4	...	3.4	1.2	...	...	...
Williamson	14.6	...	...	6.4	6.0	2.2	...	...	...
Wilson	14.7	...	...	3.2	10.4	1.0	...	...	...
All counties	2895.3	120.6	360.5	938.8	834.2	555.6	78.6	3.4	3.5

[1] Includes redcedar forest type.
[2] Includes redcedar-hardwood type.

Table 28 – *Volume of hardwood growing stock on timberland by forest type, Tennessee Counties, 1989*

County	Total	Forest type group White-red jack pine	Loblolly-shortleaf[1] pine Planted	 Natural	Oak-[2] pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood	Maple-beech-birch
	Million cubic feet								
Anderson	159.8	...	...	4.2	5.0	143.0	...	...	7.6
Bedford	46.4	...	...	1.9	0.2	39.1	5.2	...	...
Benton	161.4	...	0.4	...	1.9	157.5	1.6	...	...
Bledsoe	117.6	...	0.8	2.9	14.8	99.1	...	...	...
Blount	69.2	3.0	0.5	0.8	15.4	49.6	...	...	...
Bradley	61.7	...	...	8.2	0.3	53.1	...	...	...
Campbell	297.6	...	...	5.9	14.9	276.9	...	...	...
Cannon	83.1	...	...	2.0	9.1	72.0	...	...	...
Carroll	233.7	...	1.1	...	6.8	170.9	54.9	...	...
Carter	235.6	...	...	1.0	12.7	208.2	...	...	13.7
Cheatam	140.5	...	...	...	...	140.5	...	...	...
Chester	73.4	...	0.8	0.4	17.5	50.4	3.9	0.3	...
Claiborne	184.8	...	...	0.6	6.5	158.2	...	...	19.4
Clay	85.2	...	...	...	2.7	82.5	...	...	...
Cocke	190.4	...	...	6.2	18.0	158.0	8.2	...	...
Coffee	154.3	...	...	...	...	147.1	7.3	...	...
Crockett	33.0	...	...	...	...	33.0	...	...	...
Cumberland	295.2	5.0	0.5	5.2	39.7	244.9	...	...	...
Davidson	110.0	...	...	...	4.1	105.9	...	...	...
Decatur	181.8	...	6.7	...	4.5	161.4	9.2	...	...
De Kalb	153.2	...	...	1.6	10.8	124.3	16.5	...	...
Dickson	215.6	...	...	...	3.6	212.1	...	...	...
Dyer	51.5	...	...	...	...	16.1	35.4	...	...
Fayette	180.9	...	...	6.8	7.8	138.6	27.8	...	...

Table 28 – *Volume of hardwood growing stock on timberland by forest type, Tennessee Counties, 1989 - Continued*

		Forest type group							
			Loblolly-shortleaf[1] pine						
County	Total	White-red jack pine	Planted	Natural	Oak-[2] pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood	Maple-beech-birch
	Million cubic feet								
Fentress	235.1	...	...	7.5	39.9	187.7	...	...	...
Franklin	171.4	...	...	...	3.0	168.4	...	...	...
Gibson	47.0	...	...	...	...	47.0	...	...	...
Giles	146.3	2.6	...	...	...	141.5	2.2	...	...
Grainger	138.0	...	...	...	10.2	127.8	...	...	...
Greene	205.2	...	...	8.6	16.3	162.2	...	...	18.1
Grundy	162.5	...	...	4.7	6.3	151.5	...	...	...
Hamblen	49.2	...	...	2.6	7.6	39.0	...	...	...
Hamilton	156.8	...	5.0	5.6	17.0	128.7	0.5	...	...
Hancock	61.6	...	...	...	2.1	53.5	...	...	6.0
Hardeman	239.1	...	1.4	2.1	11.6	176.9	47.1	...	...
Hardin	192.4	...	2.2	4.6	21.9	115.4	48.2	...	...
Hawkins	164.1	...	...	...	17.6	136.5	...	...	10.0
Haywood	122.5	...	...	...	...	9.7	112.8	...	...
Henderson	175.0	...	3.5	10.0	3.8	115.8	41.9	...	...
Henry	228.2	...	0.6	...	...	160.0	67.5	...	...
Hickman	332.0	...	0.4	...	...	331.6	...	...	...
Houston	113.4	...	...	...	...	113.4	...	...	...
Humphreys	268.8	...	...	...	...	268.8	...	...	...
Jackson	156.4	...	...	...	11.1	145.2	...	...	...
Jefferson	82.7	...	7.3	...	2.0	73.4	...	...	...
Johnson	162.9	...	...	...	21.9	120.6	...	...	20.4
Knox	129.9	...	...	1.2	17.2	111.5	...	...	...
Lake	33.2	...	...	...	...	...	33.2	...	...
Lauderdale	114.2	...	...	...	...	33.3	50.7	30.2	...
Lawrence	173.3	...	...	...	...	162.0	11.3	...	...
Lewis	163.2	...	...	...	...	147.9	15.3	...	...
Lincoln	104.4	...	...	4.1	3.7	88.5	8.1	...	...
Loudon	54.2	...	...	2.3	7.4	44.1	...	...	0.5
McMinn	107.1	...	7.2	15.2	9.8	67.1	7.7	...	...
McNairy	154.7	...	0.3	10.6	20.9	98.2	24.7	...	...
Macon	104.9	...	...	...	...	104.9	...	...	...
Madison	201.1	...	...	0.7	8.8	115.6	76.0	...	...
Marion	224.3	...	...	...	18.3	202.1	3.9	...	...
Marshall	45.7	...	...	1.3	6.8	37.6	...	...	...
Maury	107.8	...	...	...	1.5	106.3	...	...	...
Meigs	71.1	...	3.7	...	17.3	50.1	...	...	...
Monroe	275.9	1.5	...	23.2	47.1	173.0	...	...	31.0
Montgomery	134.6	...	...	...	8.4	126.3	...	...	...
Moore	52.6	...	...	...	...	52.6	...	...	...
Morgan	279.2	...	...	...	59.5	219.7	...	...	...
Obion	128.5	...	...	...	...	71.1	57.4	...	...
Overton	259.9	...	...	2.2	12.7	245.0	...	...	...
Perry	240.5	...	...	1.8	2.2	232.0	4.5	...	...
Pickett	85.9	...	...	...	...	85.9	...	...	...
Polk	128.2	12.8	...	28.0	26.3	56.4	...	...	4.7
Putnam	183.9	...	...	0.3	7.6	176.0	...	...	...
Rhea	136.0	...	0.4	...	19.4	116.3	...	...	...

Table 28 – *Volume of hardwood growing stock on timberland by forest type, Tennessee Counties, 1989 - Continued*

County	Total	Forest type group: White-red jack pine	Loblolly-shortleaf[1] pine: Planted	Loblolly-shortleaf[1] pine: Natural	Oak-[2] pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood	Maple-beech-birch
	Million cubic feet								
Roane	182.7	...	...	3.3	18.1	161.3	...	...	...
Robertson	65.9	...	...	...	...	65.9	...	...	...
Rutherford	40.6	...	...	3.4	11.8	25.4	...	...	...
Scott	383.1	4.0	...	6.8	25.0	347.2	...	...	...
Sequatchie	80.3	1.5	...	11.2	...	67.7	...	...	...
Sevier	114.4	...	...	3.4	35.0	76.1	...	...	...
Shelby	187.4	...	...	...	...	98.0	80.5	8.9	...
Smith	74.9	...	...	...	3.2	71.7	...	...	...
Stewart	230.1	...	...	3.7	...	226.4	...	...	...
Sullivan	126.8	5.0	...	0.6	14.7	106.6	...	...	...
Sumner	75.8	...	...	1.1	...	74.6	...	...	...
Tipton	76.6	...	...	...	...	57.8	7.5	11.2	...
Trousdale	20.6	...	...	...	4.1	16.5	...	...	...
Unicoi	123.7	3.1	...	...	15.4	105.3	...	...	...
Union	100.0	...	...	2.2	15.5	66.4	...	...	15.9
Van Buren	107.5	4.9	0.2	2.3	4.3	95.8	...	...	...
Warren	111.6	...	...	...	0.5	103.1	8.0	...	...
Washington	76.1	...	...	...	6.7	69.5	...	...	...
Wayne	311.0	...	..	2.8	5.5	298.6	4.1	...	...
Weakley	118.9	...	0.9	...	...	45.9	72.1	...	...
White	172.3	...	1.8	...	4.1	162.4	4.0	...	...
Williamson	149.1	...	...	1.6	6.8	132.7	8.0	...	...
Wilson	36.7	...	...	1.4	19.1	16.2	...	...	...
All counties	13787.4	43.2	45.5	228.0	873.3	11431.7	967.7	50.6	147.3

[1] Includes redcedar forest type.
[2] Includes redcedar-hardwood forest type.

Table 29–*Volume of softwood growing stock in the saw-log portion of sawtimber trees on timberland by forest type, Tennessee Counties, 1989*

County	Total	Forest type group: White-red jack pine	Loblolly-shortleaf[1] pine: Planted	Loblolly-shortleaf[1] pine: Natural	Oak[2]-pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood	Maple-beech-birch
	Million cubic feet								
Anderson	28.4	...	...	11.7	7.2	9.5	...	...	...
Bedford	0.9	...	...	0.5	0.4	...	...	...	...
Benton	2.7	...	2.2	...	0.3	0.2	...	...	...
Bledsoe	33.3	...	2.6	14.9	10.3	5.4	...	...	...
Blount	26.9	5.0	4.2	4.5	9.7	3.5	...	...	...
Bradley	34.1	...	...	30.6	...	3.5	...	...	...
Campbell	33.2	...	...	15.0	12.4	5.8	...	...	...
Cannon	1.9	...	...	1.0	0.8	...	...	...	...
Carroll	13.5	...	5.5	...	4.4	3.6	...	...	...
Carter	29.6	...	...	1.1	14.9	13.1	...	...	0.4
Cheatam	2.6	...	...	...	...	2.6	...	...	...
Chester	20.7	...	6.7	0.8	11.2	2.0	...	...	...
Claiborne	6.4	...	...	0.4	3.4	2.7	...	...	...
Clay	1.4	...	...	...	...	1.4	...	...	...
Cocke	31.2	...	...	12.0	10.1	9.1	...	...	...
Coffee	...	...	...	...	...	...	...	...	...
Crockett	...	...	...	...	...	...	...	...	...
Cumberland	74.4	6.4	0.4	22.7	24.7	20.3	...	...	...
Davidson	1.4	...	...	...	0.3	1.0	...	...	...
Decatur	16.1	...	12.3	...	1.9	1.9	...	...	...
De Kalb	4.5	...	...	2.2	2.3	...	...	...	...
Dickson	...	...	...	...	...	...	...	...	...
Dyer	...	...	...	...	...	...	...	...	...
Fayette	8.5	...	...	5.8	0.9	1.8	...	...	...

Table 29–*Volume of softwood growing stock in the saw-log portion of sawtimber trees on timberland by forest type, Tennessee Counties, 1989 - Continued*

County	Total	Forest type group							
		White-red jack pine	Loblolly-shortleaf[1] pine		Oak[2]-pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood	Maple-beech-birch
			Planted	Natural					
	Million cubic feet								
Fentress	67.9	...	2.9	19.7	23.8	21.5	...	...	...
Franklin	1.3	...	...	...	0.6	0.6	...	...	...
Gibson	...	...	...	...	...	...	...	...	...
Giles	2.8	2.1	...	...	...	0.8	...	...	...
Grainger	10.0	...	...	...	3.6	6.3	...	...	...
Greene	22.7	...	...	9.0	9.3	4.5	...	...	...
Grundy	12.1	...	...	7.5	0.7	3.9	...	...	...
Hamblen	12.6	...	...	11.0	1.6	...	...	...	...
Hamilton	64.6	...	11.1	18.7	21.3	13.4	...	...	...
Hancock	1.7	...	...	...	0.2	1.5	...	...	...
Hardeman	35.0	...	17.6	9.8	2.6	3.7	1.3	...	...
Hardin	28.7	...	5.9	9.7	9.1	3.3	0.7	...	...
Hawkins	13.9	...	...	2.7	8.6	2.6	...	...	...
Haywood	...	...	...	...	...	...	...	...	...
Henderson	20.5	...	14.4	5.2	0.9	...	...	...	...
Henry	1.8	...	1.8	...	...	...	...	...	...
Hickman	7.4	...	6.2	...	...	1.2	...	...	...
Houston	0.3	...	...	...	...	0.3	...	...	...
Humphreys	2.4	...	...	...	...	2.4	...	...	...
Jackson	3.9	...	...	...	3.4	0.5	...	...	...
Jefferson	9.2	...	8.1	...	0.3	0.8	...	...	...
Johnson	22.7	...	...	...	10.5	12.2	...	...	...
Knox	20.0	...	...	4.6	10.7	4.7	...	...	...
Lake	37.3	...	...	...	...	...	37.3	...	...
Lauderdale	17.9	...	...	...	...	...	14.6	3.4	...
Lawrence	...	...	...	...	...	...	...	...	...
Lewis	0.7	...	...	...	...	0.7	...	...	...
Lincoln	1.0	...	...	1.0	...	...	...	...	...
Loudon	25.6	...	11.4	9.2	4.9	...	...	...	...
McMinn	51.8	...	13.3	25.3	9.6	3.6	...	...	...
McNairy	41.0	...	0.3	32.0	6.4	1.8	0.6	...	...
Macon	...	...	...	...	...	...	...	...	...
Madison	4.0	...	...	2.2	0.3	1.0	0.5	...	...
Marion	27.2	...	...	...	12.4	14.8	...	...	...
Marshall	1.4	...	...	0.9	0.2	0.2	...	...	...
Maury	...	...	...	...	...	...	...	...	...
Meigs	29.5	...	13.9	...	9.6	6.0	...	...	...
Monroe	118.4	7.7	...	56.7	30.9	22.8	...	...	0.2
Montgomery	3.6	. .	...	...	1.9	1.6	...	...	...
Moore	1.3	...	...	...	...	1.3	...	...	...
Morgan	59.3	...	...	...	34.9	24.4	...	...	...
Obion	11.7	...	...	...	...	...	11.7	...	...
Overton	23.3	...	...	13.0	6.0	4.3	...	...	...
Perry	2.6	...	...	1.0	...	1.6	...	...	...
Pickett	4.1	...	...	...	...	4.1	...	...	...
Polk	126.5	27.3	...	67.7	22.7	7.3	...	...	1.4
Putnam	13.9	...	...	...	9.2	4.6	...	...	...
Rhea	19.2	...	3.3	0.8	12.3	2.8	...	...	...

Table 29–*Volume of softwood growing stock in the saw-log portion of sawtimber trees on timberland by forest type, Tennessee Counties, 1989 - Continued*

County	Total	White-red jack pine	Loblolly-shortleaf[1] pine: Planted	Loblolly-shortleaf[1] pine: Natural	Oak[2]-pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood	Maple-beech-birch
	Million cubic feet								
Roane	33.4	...	7.3	7.9	12.2	6.1	...	...	...
Robertson	0.4	...	...	...	...	0.4	...	...	...
Rutherford	1.2	...	...	0.5	0.6	0.1	...	...	...
Scott	68.7	11.5	...	10.4	21.2	25.6	...	...	...
Sequatchie	30.1	4.6	0.3	15.4	...	9.8	...	...	...
Sevier	43.2	...	...	7.7	29.3	6.3	...	...	...
Shelby	1.5	...	...	...	...	0.4	1.1	...	...
Smith	0.3	...	...	...	...	0.3	...	...	...
Stewart	4.3	...	...	3.9	...	0.4	...	...	...
Sullivan	22.5	10.6	...	3.8	5.8	2.3	...	...	...
Sumner	0.9	...	...	0.9	...	...	...	...	...
Tipton	...	...	...	...	...	...	...	...	...
Trousdale	0.3	...	...	...	0.3	...	...	...	...
Unicoi	36.6	12.2	...	...	13.7	10.7	...	...	...
Union	12.6	...	...	0.7	9.6	2.4	...	...	...
Van Buren	17.8	6.8	0.4	6.7	1.6	2.3	...	...	...
Warren	...	...	...	...	...	...	...	...	...
Washington	15.5	...	...	...	5.4	10.0	...	...	...
Wayne	7.4	...	...	4.1	0.4	2.9	...	...	...
Weakley	13.4	...	9.6	...	...	0.5	3.3	...	...
White	7.0	...	4.3	...	2.0	0.7	...	...	...
Williamson	5.0	...	...	2.0	1.8	1.2	...	...	...
Wilson	4.6	...	...	0.2	4.4	...	...	...	...
All counties	1681.0	94.0	166.0	495.1	492.1	357.1	71.2	3.4	2.1

Forest type group

[1] Includes redcedar forest type.
[2] Includes redcedar-hardwood forest type.

Table 30 – *Volume of hardwood growing stock in the saw-log portion of sawtimber trees on timberland by type group, Tennessee Counties, 1989*

County	Total	White-red jack pine	Loblolly-shortleaf[1] pine: Planted	Loblolly-shortleaf[1] pine: Natural	Oak-[2] pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood	Maple-beech-birch
	Million cubic feet								
Anderson	101.6	...	...	1.4	3.6	93.4	...	...	3.1
Bedford	23.3	...	...	1.4	...	18.3	3.7	...	...
Benton	75.2	...	...	...	0.4	74.8	...	...	...
Bledsoe	48.3	...	...	0.8	5.5	42.1	...	...	...
Blount	37.5	1.7	0.2	...	7.2	28.5	...	...	...
Bradley	39.7	...	...	2.4	0.3	36.9	...	...	...
Campbell	186.7	...	...	2.6	8.4	175.6	...	...	...
Cannon	39.4	...	...	0.7	1.1	37.6	...	...	...
Carroll	121.2	...	0.8	...	4.8	90.8	24.8	...	...
Carter	131.5	...	...	0.3	4.2	124.0	...	...	2.9
Cheatam	72.6	...	...	...	...	72.6	...	...	...
Chester	33.2	...	0.5	0.4	8.6	22.1	1.6	...	...
Claiborne	99.7	...	...	0.5	1.1	87.0	...	...	11.2
Clay	34.6	...	...	...	1.3	33.3	...	...	...
Cocke	104.6	...	...	2.9	6.8	90.2	4.7	...	...
Coffee	80.4	...	...	...	...	75.9	4.4	...	...
Crockett	25.9	...	...	...	...	25.9	...	...	...
Cumberland	142.7	3.0	...	2.4	19.4	117.9	...	...	...
Davidson	58.3	...	...	...	...	58.3	...	...	...
Decatur	96.2	...	1.6	...	2.5	85.7	6.3	...	...
De Kalb	82.3	...	...	...	1.2	69.0	12.0	...	...
Dickson	126.7	...	...	...	1.5	125.2	...	...	...
Dyer	36.5	...	...	...	...	11.2	25.2	...	...
Fayette	101.4	...	...	1.2	4.5	82.6	13.2	...	...

Forest type group

Table 30 – *Volume of softwood growing stock in the saw-log portion of sawtimber trees on timberland by type group, Tennessee Counties, 1989*

County	Total	Forest type group							
		White-red jack pine	Loblolly-shortleaf pine[1]		Oak-pine[2]	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood	Maple-beech-birch
			Planted	Natural					
	Million cubic feet								
Fentress	107.6	...	...	2.4	12.4	92.9	...	...	...
Franklin	93.2	...	...	...	0.6	92.6	...	...	...
Gibson	25.6	...	...	...	...	25.6	...	...	...
Giles	54.8	1.1	...	...	...	52.6	1.2	...	...
Grainger	76.9	...	...	...	4.8	72.1	...	...	...
Greene	116.8	...	...	4.2	4.4	95.1	...	...	13.1
Grundy	69.6	...	...	1.9	2.3	65.4	...	...	...
Hamblen	31.1	...	...	0.5	6.5	24.1	...	...	...
Hamilton	88.1	...	2.2	2.1	7.3	76.5	...	...	...
Hancock	32.6	...	...	...	...	31.3	...	...	1.3
Hardeman	128.5	...	0.4	0.9	5.4	96.0	25.8	...	...
Hardin	85.7	...	0.6	1.3	8.7	51.3	23.8	...	...
Hawkins	87.4	...	...	...	5.3	74.0	...	...	8.1
Haywood	81.2	...	...	...	...	6.6	74.5	...	...
Henderson	92.0	...	1.7	3.6	1.1	61.0	24.6	...	...
Henry	142.1	...	...	...	...	93.3	48.8	...	...
Hickman	147.6	...	...	...	...	147.6	...	...	...
Houston	60.6	...	...	...	...	60.6	...	...	...
Humphreys	132.9	...	...	...	...	132.9	...	...	...
Jackson	90.2	...	...	...	5.5	84.7	...	...	...
Jefferson	49.1	...	3.5	...	0.8	44.8	...	...	...
Johnson	84.8	...	...	...	13.1	57.4	...	...	14.3
Knox	81.5	...	...	1.0	9.3	71.2	...	...	...
Lake	25.6	...	...	...	...	...	25.6	...	
Lauderdale	84.0	...	...	...	...	22.1	37.9	24.0	...
Lawrence	88.2	...	...	...	...	78.6	9.7	...	...
Lewis	72.8	...	...	...	...	63.7	9.1	...	...
Lincoln	46.0	...	...	1.3	0.7	42.6	1.4	...	...
Loudon	36.6	...	...	0.8	4.2	31.6	...	...	...
McMinn	60.5	...	2.7	4.1	6.4	42.6	4.6	...	...
McNairy	66.3	...	0.2	3.1	7.2	46.8	9.1	...	...
Macon	64.0	...	...	...	...	64.0	...	...	...
Madison	120.3	...	...	...	2.9	68.4	49.0	...	...
Marion	118.1	...	...	...	9.3	106.3	2.5	...	...
Marshall	25.4	...	...	0.5	3.2	21.7	...	...	...
Maury	41.3	...	...	...	0.3	41.0	...	...	...
Meigs	35.1	...	1.2	...	9.6	24.3	...	...	...
Monroe	138.6	0.5	...	6.2	22.3	88.4	...	...	21.3
Montgomery	62.6	...	...	...	4.6	58.0	...	...	...
Moore	29.1	...	...	...	...	29.1	...	...	...
Morgan	160.0	...	...	...	34.1	125.9	...	...	...
Obion	92.8	...	...	...	...	55.0	37.8	...	...
Overton	155.1	...	...	2.0	6.7	146.4	...	...	...
Perry	103.1	...	...	...	0.3	100.3	2.5	...	...
Pickett	44.3	...	...	...	...	44.3	...	...	...
Polk	70.2	7.5	...	14.3	16.2	31.1	...	...	1.1
Putnam	106.4	...	...	...	3.0	103.4	...	...	...
Rhea	67.3	...	...	...	8.2	59.1	...	...	...

Table 30 — *Volume of hardwood growing stock in the saw-log portion of sawtimber trees on timberland by type group, Tennessee Counties, 1989 - Continued*

		Forest type group							
			Loblolly-shortleaf[1] pine						
County	Total	White-red jack pine	Planted	Natural	Oak-[2] pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood	Maple-beech-birch
	Million cubic feet								
Roane	91.4	...	...	2.0	9.2	80.2	...	...	...
Robertson	43.5	...	...	...	...	43.5	...	...	...
Rutherford	15.6	...	...	0.6	4.4	10.5	...	...	...
Scott	188.8	3.1	...	1.7	8.9	175.0	...	...	...
Sequatchie	36.2	...	...	4.5	...	31.8	...	...	...
Sevier	62.7	...	...	0.4	17.8	44.4	...	...	...
Shelby	111.4	...	...	...	...	61.6	44.0	5.8	...
Smith	32.7	...	...	...	0.9	31.8	...	...	...
Stewart	125.4	...	...	2.4	...	123.1	...	...	...
Sullivan	65.8	1.5	...	0.4	4.9	58.9	...	...	...
Sumner	45.2	...	...	0.5	...	44.8	...	...	...
Tipton	45.8	...	...	...	...	39.7	4.3	1.8	...
Trousdale	8.4	...	...	...	1.4	7.0	...	...	...
Unicoi	64.5	0.3	...	...	7.7	56.5	...	...	...
Union	64.1	...	...	1.0	8.4	44.4	...	...	10.3
Van Buren	57.2	3.2	...	0.7	0.9	52.3	...	...	...
Warren	63.4	...	...	...	0.4	57.8	5.1	...	...
Washington	48.3	...	...	...	4.2	44.0	...	...	...
Wayne	135.4	...	...	1.0	2.2	130.0	2.3	...	...
Weakley	76.1	...	...	...	...	27.2	48.9	...	...
White	105.5	...	0.7	...	1.9	102.3	0.6	...	...
Williamson	86.0	...	...	0.3	2.0	77.7	6.0	...	...
Wilson	13.2	...	...	0.4	5.3	7.4	...	...	...
All counties	7359.8	22.0	16.3	83.0	389.6	6135.2	595.2	31.7	86.8

[1] Includes redcedar forest type.

[2] Includes redcedar-hardwood type.

Table 31–*Volume of timber on timberland by county, class of timber and species group, Tennessee Counties, 1989*

County	All classes	Growing stock		Rough		Rotten	
		Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
	Million cubic feet						
Anderson	219.5	39.4	159.8	1.6	11.7	...	7.0
Bedford	68.7	4.4	46.4	2.9	12.2	...	2.8
Benton	192.8	14.5	161.4	0.1	12.6	...	4.2
Bledsoe	200.1	70.0	117.6	...	10.3	...	2.3
Blount	115.7	41.7	69.2	0.3	4.2	...	0.2
Bradley	116.6	52.2	61.7	...	2.7	...	...
Campbell	385.1	56.4	297.6	0.7	20.9	...	9.5
Cannon	106.8	9.1	83.1	0.7	12.1	...	1.8
Carroll	272.2	18.7	233.7	0.1	18.8	...	0.8
Carter	310.7	42.0	235.6	0.9	25.8	...	6.3
Cheatam	159.9	5.2	140.5	...	8.8	...	5.4
Chester	109.7	30.6	73.4	1.0	4.0	...	0.6
Claiborne	216.2	11.5	184.8	0.3	15.8	0.4	3.5
Clay	96.2	3.4	85.2	...	5.1	...	2.5
Cocke	252.0	47.6	190.4	1.1	11.9	...	1.0
Coffee	175.2	...	154.3	...	11.3	...	9.6
Crockett	34.0	...	33.0	...	1.0	...	...
Cumberland	446.6	123.1	295.2	2.9	18.9	...	6.4
Davidson	137.2	4.4	110.0	1.4	12.8	0.3	8.4
Decatur	217.8	24.7	181.8	0.3	7.7	0.3	2.9
De Kalb	180.2	13.6	153.2	0.8	8.8	...	3.8
Dickson	227.9	1.2	215.6	...	9.2	...	1.8
Dyer	59.3	...	51.5	...	7.8	...	...
Fayette	228.4	20.7	180.9	2.7	18.6	...	5.4
Fentress	381.1	128.4	235.1	0.4	13.4	0.3	3.4
Franklin	203.5	4.4	171.4	0.6	15.0	0.1	12.0
Gibson	52.0	...	47.0	...	5.0	...	...
Giles	177.8	5.1	146.3	0.7	17.5	...	8.3
Grainger	171.2	18.2	138.0	0.2	13.0	...	1.8
Greene	270.0	41.6	205.2	1.6	18.4	...	3.1
Grundy	223.1	31.9	162.5	0.7	13.0	0.4	14.6
Hamblen	76.0	21.1	49.2	...	5.4	...	0.2
Hamilton	273.3	92.0	156.8	0.2	19.3	0.2	4.8
Hancock	75.7	3.6	61.6	0.2	9.9	...	0.3
Hardeman	329.5	58.6	239.1	1.1	26.3	...	4.5
Hardin	284.1	66.0	192.4	2.0	16.1	0.2	7.4
Hawkins	208.1	27.8	164.1	0.9	14.4	...	1.0
Haywood	130.5	...	122.5	...	6.6	...	1.3
Henderson	251.5	39.5	175.0	2.7	25.8	0.6	7.8
Henry	256.5	2.9	228.2	0.3	19.5	...	5.6
Hickman	380.4	13.7	332.0	0.8	28.6	...	5.4
Houston	122.3	0.5	113.4	...	7.6	...	0.8
Humphreys	289.3	3.5	268.8	0.3	13.1	0.2	3.3
Jackson	190.4	10.2	156.4	1.3	17.5	0.2	4.8
Jefferson	106.1	15.5	82.7	...	7.0	...	0.9
Johnson	208.9	30.2	162.9	...	13.2	...	2.6
Knox	192.0	39.7	129.9	2.5	16.3	...	3.6
Lake	74.9	38.8	33.2	...	2.8	...	...

Table 31–*Volume of timber on timberland by county, class of timber and species group, Tennessee Counties, 1989 Continued*

County	All classes	Growing stock		Rough		Rotten	
		Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
	Million cubic feet						
Lauderdale	163.8	20.0	114.2	1.9	12.8	1.7	13.3
Lawrence	184.9	...	173.3	...	9.6	...	1.9
Lewis	176.9	1.6	163.2	...	9.4	...	2.7
Lincoln	133.9	9.7	104.4	1.0	13.9	...	4.8
Loudon	103.7	43.3	54.2	1.6	3.7	0.2	0.6
McMinn	227.3	107.9	107.1	1.2	9.1	0.3	1.7
McNairy	251.8	78.5	154.7	1.6	13.5	...	3.5
Macon	112.2	0.3	104.9	...	5.3	...	1.6
Madison	223.7	8.1	201.1	0.7	11.9	...	1.9
Marion	303.8	41.1	224.3	0.5	26.9	...	10.9
Marshall	64.4	5.9	45.7	1.5	9.4	...	1.9
Maury	126.5	0.5	107.8	0.4	16.5	...	1.3
Meigs	132.6	55.5	71.1	...	5.7	...	0.3
Monroe	511.9	201.5	275.9	5.6	21.5	...	7.5
Montgomery	166.2	8.4	134.6	0.3	19.5	...	3.4
Moore	60.6	2.7	52.6	0.7	3.3	...	1.3
Morgan	393.9	89.5	279.2	...	17.3	0.2	7.7
Obion	153.6	12.9	128.5	0.8	9.5	...	1.9
Overton	305.8	31.5	259.9	0.6	12.0	...	1.9
Perry	270.3	7.4	240.5	0.6	16.5	...	5.3
Pickett	100.8	7.0	85.9	0.3	4.5	...	3.1
Polk	339.9	197.9	128.2	1.5	9.5	0.1	2.8
Putnam	219.6	18.9	183.9	0.3	13.4	...	3.2
Rhea	193.2	44.1	136.0	0.7	11.1	...	1.2
Roane	247.1	46.1	182.7	...	15.7	...	2.6
Robertson	74.4	0.4	65.9	...	7.2	...	0.9
Rutherford	82.7	11.7	40.6	7.5	20.0	0.2	2.7
Scott	524.1	107.1	383.1	0.6	19.5	...	13.9
Sequatchie	148.2	54.1	80.3	0.8	10.5	...	2.6
Sevier	196.1	69.1	114.4	2.1	6.1	...	4.3
Shelby	215.9	1.7	187.4	0.4	24.5	...	1.9
Smith	97.2	4.2	74.9	0.7	14.7	...	2.7
Stewart	257.1	6.2	230.1	0.7	18.1	...	1.9
Sullivan	170.2	33.2	126.8	0.4	8.4	...	1.4
Sumner	93.8	3.6	75.8	1.0	12.0	...	1.5
Tipton	79.4	...	76.6	...	2.5	...	0.4
Trousdale	29.7	4.8	20.6	0.3	3.9	...	0.2
Unicoi	186.3	46.5	123.7	1.3	10.4	...	4.3
Union	126.8	23.2	100.0	0.7	2.9	...	...
Van Buren	160.1	42.2	107.5	...	8.7	...	1.7
Warren	134.0	...	111.6	0.5	18.3	...	3.6
Washington	101.4	20.3	76.1	0.4	4.0	...	0.6
Wayne	353.9	23.0	311.0	0.3	14.6	...	4.9
Weakley	159.8	20.8	118.9	0.4	13.9	...	5.8
White	206.0	26.0	172.3	...	5.2	...	2.4
Williamson	189.7	14.6	149.1	1.7	17.6	0.3	6.5
Wilson	67.0	14.7	36.7	4.5	9.7	...	1.3
All counties	18279.2	2895.3	13787.4	80.4	1171.8	6.3	337.9

Table 32–*Number of live trees on timberland by detailed species and diameter class, Tennessee Counties, 1989*

		Diameter class (inches at breast height)											
Species	All classes	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Shortleaf pine	108385	26722	23672	15253	17727	11994	8113	3332	1172	298	66	36	...
Loblolly pine	154883	38864	42247	37993	20484	9342	3640	1742	312	136	93	30	...
Virginia pine	259027	95179	51584	41086	33316	18140	11718	5664	1732	483	96	31	...
Pitch pine	10977	3153	654	2795	1896	1100	641	377	286	25	33	15	...
Other s. pines	3234	327	852	604	737	422	246	11	26	...	9	...	...
E. white pine	77301	48898	13458	3893	3443	2194	1778	1030	908	634	481	521	63
Redcedar	431268	253757	105344	44368	16608	6871	2927	963	231	168	9	21	...
Hemlock-spruce	62223	37865	12531	5007	2189	1434	1239	771	369	384	188	232	13
Cypress	1975	...	563	...	245	136	31	143	176	114	117	293	158
Total softwoods	1109272	504764	250905	151000	96646	51633	30331	14034	5212	2243	1092	1179	233
Select white oaks	505443	199075	122396	59261	40019	30902	20583	15195	8320	4682	2404	2430	177
Select red oaks	82545	21209	12272	9820	10655	8180	5962	5625	3128	2138	1509	1809	240
Other white oaks	311873	96909	56224	47592	37432	26624	17667	12525	7419	4025	2410	2719	327
Other red oaks	318112	104124	51028	41180	34557	29151	20799	15867	9172	5838	3172	2942	282
Sweet pecan	798	676	...	...	...	51	...	32	21	...	...	12	5
Water hickory	197	...	...	...	...	59	72	53	...	13	...	...	...
Other hickories	591131	303208	120481	56164	44268	30725	17614	10005	4551	2192	1060	809	54
Persimmon	57541	39263	9150	5962	2003	692	357	21	61	...	33	...	...
Hard maple	340466	222873	60964	24093	12131	7976	5140	3533	1569	1034	514	517	122
Soft maple	719065	498873	123728	44876	23269	12371	7127	3752	2124	1324	751	780	90
Boxelder	31934	14914	6242	3787	3349	1932	867	392	331	88	...	25	8
Beech	100895	59293	15850	6869	5376	3770	2431	2215	1211	1285	696	1534	366
Sweetgum	201440	110707	35370	20020	13040	9157	5960	3380	2349	603	435	374	46
Blackgum	495826	390547	61767	20637	9667	5477	3240	2104	1238	541	353	246	9
Other gums/tupelos	4430	2624	563	214	480	131	58	170	64	68	40	17	...
White ash	162942	100000	29435	14061	8093	4416	2907	1874	971	502	382	274	28
Other ashes	78028	39014	17694	8833	4382	3808	2040	736	781	457	196	87	...
Sycamore	10389	1638	2302	1566	1043	1305	455	665	451	233	289	363	79
Cottonwood	1314	...	602	274	...	48	62	21	78	55	22	69	82
Basswood	15348	11047	...	1009	810	886	503	362	320	228	102	78	4
Yellow-poplar	272756	132741	44099	24309	19616	14977	11983	9679	6448	4174	2448	2135	146
Magnolia	9772	3290	2039	1537	1222	924	334	146	155	54	63	8	...
Sweetbay	343	...	...	305	...	38	...	...	...	...	...	...	...
Willow	11138	6212	1054	1270	939	778	243	239	66	96	72	141	28
Black walnut	20065	4735	2892	3973	2841	2255	1632	922	459	176	112	64	4
Black cherry	124937	80077	26294	8868	5191	2234	989	507	380	258	75	64	...
American elm	82040	53715	13722	6281	3102	2427	1190	918	253	199	97	106	29
Other elms	227154	159667	37830	16633	7222	3035	1587	630	226	179	62	74	8
River birch	10761	2878	4106	1812	654	505	363	177	97	80	44	47	...
Other birches	32829	17516	6916	4682	2431	761	286	126	27	24	17	36	7
Hackberry	93105	54549	16942	7656	6210	3010	1936	1437	646	406	139	117	58
Black locust	53946	23278	14913	5263	4657	3017	1259	737	371	246	149	57	...
Other locusts	9817	4918	1888	898	975	581	324	142	39	40	...	13	...
Sassafras	180389	119845	36377	12013	5923	3405	1547	726	269	145	117	21	...
Dogwood	764295	618627	126092	17478	1920	153	26	...	...	...	...	...	...
Holly	29421	25747	2659	591	215	127	56	...	16	11	...	...	...
Other commercial	54440	29109	12957	5531	3122	1684	1021	531	166	115	70	117	16
Total hardwoods	6006928	3552898	1076848	485317	316812	217570	138622	95444	53779	31508	17832	18084	2215
Noncommercial	944143	656916	204131	57841	17570	4601	1851	780	264	79	71	39	...
All species	8060343	4714579	1531884	694158	431027	273805	170804	110258	59256	33829	18995	19301	2448

Table 33—*Number of growing-stock trees on timberland by detailed species and diameter class, Tennessee Counties, 1989*

Species	All classes	Diameter class (inches at breast height) 5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees										
Shortleaf pine	57146	15046	17168	11994	8060	3332	1158	298	55	36	...
Loblolly pine	72018	36887	20139	9062	3616	1742	312	136	93	30	...
Virginia pine	108089	38752	32485	17670	11464	5490	1683	418	96	31	...
Pitch pine	6486	2330	1737	1068	641	377	270	25	33	5	...
Other s. pines	2055	604	737	422	246	11	26	...	9	...	...
E. white pine	14591	3730	3443	2127	1691	1030	890	623	481	511	63
Redcedar	57891	36301	13854	4689	2131	642	139	119	9	8	...
Hemlock-spruce	11496	4779	2189	1388	1212	771	352	376	188	227	13
Cypress	1246	...	170	136	31	118	139	97	117	293	146
Total softwoods	331019	138429	91924	48557	29093	13513	4968	2093	1081	1141	221
Select white oaks	170467	53082	38135	29727	19031	14366	7702	4226	2134	1980	84
Select red oaks	46632	9072	10283	7745	5784	5369	2999	2064	1437	1685	195
Other white oaks	142929	43227	34916	24682	15621	10741	6461	3408	1870	1838	163
Other red oaks	150934	38040	32941	27481	18649	14823	8281	5247	2760	2516	196
Sweet pecan	122	...	...	51	...	32	21	...	...	12	5
Water hickory	185	...	...	59	72	53	...	...	...	...	...
Other hickories	154137	49944	41908	29245	15945	9135	4294	1930	995	697	43
Persimmon	8264	5372	1778	692	323	21	46	...	33	...	...
Hard maple	45466	18048	10461	7077	4219	2712	1340	789	457	323	39
Soft maple	73892	34809	18381	9327	5147	2907	1376	887	500	514	44
Boxelder	5090	1732	1453	996	450	196	168	70	...	17	8
Beech	19380	4954	4501	3059	1832	1664	1004	913	473	837	143
Sweetgum	50612	17307	12173	8593	5717	3285	2221	538	413	320	46
Blackgum	35331	16413	8168	4449	2827	1700	954	441	190	185	4
Other gums/tupelos	883	126	285	131	...	170	64	68	30	9	...
White ash	26160	10097	6462	4007	2282	1523	824	416	319	209	21
Other ashes	16819	6667	3279	3119	1740	654	723	409	173	55	...
Sycamore	5144	1136	847	974	376	560	391	210	267	339	44
Cottonwood	699	274	...	48	62	21	78	42	22	69	82
Basswood	3519	658	758	668	503	362	286	138	82	64	...
Yellow-poplar	92046	22553	18864	14640	11685	9392	6299	4063	2406	2047	97
Magnolia	3899	1152	1222	815	334	146	122	54	46	8	...
Sweetbay	246	208	...	38	...	...	...	...	...	...	...
Willow	3486	1270	749	731	243	213	31	47	60	123	18
Black walnut	9099	2664	1869	1946	1331	689	376	112	82	26	4
Black cherry	14383	6786	4202	1843	503	441	284	243	41	39	...
American elm	10177	3689	2546	2062	769	632	198	111	78	73	19
Other elms	23631	12502	6153	2671	1332	571	165	132	54	42	8
River birch	3244	1565	582	374	331	156	83	80	34	39	...
Other birches	7173	4012	2096	639	261	101	10	10	17	21	7
Hackberry	14012	4433	4667	2170	1159	928	355	171	69	52	9
Black locust	10856	3711	3612	1848	670	552	195	139	90	39	...
Other locusts	2066	665	601	452	236	59	17	24	...	13	...
Sassafras	17924	8967	4344	2393	1200	561	256	111	71	21	...
Dogwood	5783	5181	577	...	26	...	...	...	...	...	...
Holly	579	368	151	49	...	...	...	11	...	...	...
Other commercial	5752	2146	1605	783	609	301	112	75	54	62	7
Total hardwoods	1181023	392830	280567	195583	121269	85036	47738	27179	15259	14274	1287
All species	1512041	531259	372490	244141	150362	98550	52706	29271	16339	15415	1508

Table 34–*Volume of growing-stock trees on timberland by detailed species and diameter class, Tennessee Counties, 1989*

Species	All classes	Diameter class (inches at breast height)									
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet										
Shortleaf pine	645.4	45.7	120.7	160.8	158.9	94.6	42.4	15.1	3.2	3.9	...
Loblolly pine	419.4	74.7	111.3	100.9	64.9	43.1	11.0	6.5	5.2	1.7	...
Virginia pine	1043.3	125.5	236.5	229.9	220.7	145.4	59.1	18.1	5.9	2.2	...
Pitch pine	57.6	5.5	10.2	10.9	10.2	8.8	8.6	0.9	1.8	0.5	...
Other s. pines	14.8	1.8	4.2	3.8	3.7	0.3	0.8	...	0.3	...	...
E. white pine	254.3	8.0	19.3	23.2	28.1	25.0	31.4	30.1	28.8	49.5	11.0
Redcedar	237.4	81.9	66.8	42.2	27.5	11.7	3.8	3.0	0.2	0.2	...
Hemlock-spruce	141.8	10.8	12.0	15.2	21.7	19.7	12.3	16.7	11.4	20.0	2.0
Cypress	81.4	...	1.2	2.1	0.4	2.7	4.7	4.8	6.7	31.3	27.6
Total softwoods	2895.3	353.9	582.2	589.1	536.2	351.4	174.1	95.2	63.5	109.2	40.6
Select white oaks	2097.8	139.2	231.9	332.9	341.8	356.7	261.4	180.7	110.8	133.1	9.4
Select red oaks	837.1	23.6	65.1	85.8	104.2	135.0	100.8	88.2	76.7	130.0	27.9
Other white oaks	1572.5	108.1	192.9	250.1	252.8	231.5	188.8	127.9	88.2	114.5	17.7
Other red oaks	2049.7	101.5	193.7	288.9	305.0	346.8	252.5	217.5	142.3	174.9	26.6
Sweet pecan	3.8	...	...	0.3	...	0.7	0.6	...	...	1.1	1.0
Water hickory	2.9	...	...	0.7	1.3	0.9	...	...	...	...	...
Other hickories	1601.8	120.7	241.6	323.2	300.1	241.6	157.1	91.8	58.0	60.1	7.6
Persimmon	38.2	11.8	9.4	6.8	5.4	0.7	1.7	...	2.3	...	...
Hard maple	472.6	47.7	64.9	79.9	73.6	70.3	46.6	35.5	24.5	25.7	3.7
Soft maple	603.8	97.9	111.8	106.2	86.1	66.3	41.7	34.2	23.8	32.9	2.8
Boxelder	40.6	4.2	8.4	9.2	6.1	3.7	4.9	2.5	...	1.2	0.4
Beech	314.8	13.0	25.3	33.9	32.0	39.8	32.2	35.9	23.5	64.8	14.6
Sweetgum	584.9	38.7	71.7	100.4	113.4	91.2	83.7	28.1	23.7	27.5	6.5
Blackgum	262.1	35.7	42.7	41.4	42.8	35.4	26.5	16.7	9.4	11.2	0.3
Other gums/tupelos	12.5	0.3	1.3	1.4	...	4.2	1.7	2.1	1.2	0.4	...
White ash	255.0	23.0	37.6	40.0	38.3	37.6	27.0	17.5	15.8	15.4	2.9
Other ashes	176.4	16.8	19.9	35.6	31.4	17.8	23.9	18.8	9.0	3.2	...
Sycamore	106.7	3.3	5.8	10.1	6.2	14.2	13.5	8.0	14.8	24.5	6.3
Cottonwood	32.6	0.4	...	0.4	1.2	0.7	3.4	2.2	1.5	7.0	15.8
Basswood	66.5	2.3	5.7	8.6	11.2	10.4	10.6	7.2	5.0	5.5	...
Yellow-poplar	1668.1	63.1	127.3	176.6	235.2	268.9	242.5	206.8	152.2	181.8	13.8
Magnolia	46.3	2.9	9.1	10.9	7.2	4.9	4.6	2.8	3.3	0.6	...
Sweetbay	1.2	0.7	...	0.4	...	...	...	...	...	...	...
Willow	42.8	2.9	4.1	8.3	3.9	4.8	1.2	2.1	3.7	10.4	1.4
Black walnut	91.7	6.2	11.4	19.3	18.2	14.9	11.3	4.2	3.8	1.8	0.5
Black cherry	98.3	16.7	23.4	18.3	7.3	11.1	8.6	9.3	1.6	2.0	...
American elm	91.7	9.7	14.0	19.8	12.0	14.4	6.4	4.4	3.7	5.0	2.3
Other elms	139.0	28.7	32.6	26.2	21.5	14.2	4.8	5.1	3.1	1.8	1.1
River birch	33.6	5.2	4.1	4.5	5.5	4.1	2.6	3.3	1.7	2.7	...
Other birches	45.7	12.2	13.7	8.3	5.3	2.4	0.2	0.3	1.2	1.6	0.7
Hackberry	110.4	9.6	21.8	19.9	17.1	19.1	10.3	6.2	3.4	2.6	0.6
Black locust	88.6	9.4	19.9	19.1	10.7	11.4	6.3	4.5	4.6	2.7	...
Other locusts	17.2	1.6	2.9	4.7	4.4	1.0	0.6	1.0	...	1.0	...
Sassafras	116.5	22.9	24.6	23.0	19.2	11.2	7.4	3.7	3.5	1.1	...
Dogwood	10.5	8.6	1.5	...	0.5	...	...	...	...	...	...
Holly	2.0	0.7	0.5	0.3	...	...	...	0.4	...	...	...
Other commercial	51.6	4.1	8.2	7.5	9.7	6.1	3.2	3.4	2.5	6.2	0.9
Total hardwoods	13787.4	993.3	1648.7	2122.8	2130.4	2094.1	1588.3	1172.2	818.6	1054.1	164.8
All species	16682.7	1347.2	2231.0	2711.9	2666.6	2445.4	1762.4	1267.4	882.1	1163.3	205.4

Table 35–*Volume of growing stock in the saw-log portion of sawtimber trees on timberland by detailed species and diameter class, Tennessee Counties, 1989*

Species	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet								
Shortleaf pine	412.9	131.2	140.6	84.5	37.5	13.0	2.8	3.4	...
Loblolly pine	193.8	77.8	55.5	38.4	9.9	5.8	4.8	1.5	...
Virginia pine	575.9	184.4	188.8	128.6	51.6	15.7	5.0	1.7	...
Pitch pine	34.6	8.5	8.6	7.5	7.2	0.8	1.4	0.5	...
Other s. pines	7.9	3.3	3.4	0.2	0.7	...	0.3	...	...
E. white pine	202.1	18.3	24.5	22.0	29.2	27.4	26.1	44.3	10.2
Redcedar	73.9	33.4	23.5	10.4	3.6	2.7	0.2	0.2	...
Hemlock-spruce	105.5	11.9	18.6	17.4	11.1	15.7	10.4	18.3	2.0
Cypress	74.5	1.7	0.3	2.1	3.9	4.2	6.3	29.5	26.5
Total softwoods	1681.0	470.5	464.0	311.2	154.7	85.3	57.3	99.4	38.6
Select white oaks	1125.6	...	251.7	289.7	217.9	153.0	94.4	111.1	7.9
Select red oaks	546.2	...	77.5	110.0	84.3	74.8	64.9	110.7	24.0
Other white oaks	822.3	...	189.3	188.2	157.0	106.4	72.3	95.3	13.8
Other red oaks	1208.0	...	227.1	286.7	215.3	185.9	121.2	148.9	22.8
Sweet pecan	2.7	...	...	0.6	0.5	...	...	0.8	0.7
Water hickory	1.7	...	1.0	0.7	...	...	...	...	...
Other hickories	741.8	...	224.8	199.3	132.6	76.8	51.0	50.5	6.8
Persimmon	8.2	...	3.9	0.6	1.5	...	2.1	...	...
Hard maple	218.9	...	53.2	55.3	37.3	28.6	20.3	21.3	2.9
Soft maple	228.1	...	61.6	51.3	34.7	29.0	21.1	27.8	2.5
Boxelder	14.6	...	4.4	2.9	3.9	2.0	...	1.1	0.4
Beech	196.2	...	22.9	31.9	26.8	28.9	19.1	53.9	12.6
Sweetgum	305.9	...	80.1	75.7	72.6	25.2	21.2	25.4	5.6
Blackgum	118.8	...	31.8	29.6	23.4	14.9	8.6	10.2	0.3
Other gums/tupelos	7.5	...	...	3.2	1.3	1.8	1.0	0.3	...
White ash	125.9	...	28.0	30.9	22.0	15.3	13.3	13.5	2.8
Other ashes	84.6	...	22.5	14.7	20.2	16.3	8.1	2.8	...
Sycamore	73.8	...	4.0	10.9	11.5	7.1	12.7	21.9	5.6
Cottonwood	28.9	...	1.0	0.6	3.0	2.0	1.3	6.5	14.5
Basswood	41.1	...	8.6	8.3	8.9	6.2	4.3	4.7	...
Yellow-poplar	1098.4	...	170.0	222.4	212.6	183.3	135.7	162.3	12.1
Magnolia	19.2	...	5.4	4.1	3.8	2.6	2.8	0.5	...
Willow	24.0	...	2.8	3.8	1.0	1.7	3.6	9.7	1.4
Black walnut	41.3	...	13.0	11.5	8.8	3.3	3.1	1.1	0.5
Black cherry	31.5	...	5.2	8.8	6.7	7.4	1.6	1.9	...
American elm	37.6	...	8.7	11.0	5.3	3.8	3.0	3.9	1.9
Other elms	39.4	...	14.8	11.0	3.9	4.2	2.7	1.6	1.1
River birch	15.8	...	4.2	3.5	2.0	2.5	1.3	2.3	...
Other birches	9.0	...	3.7	1.9	0.2	0.2	1.1	1.3	0.6
Hackberry	45.2	...	12.3	14.6	7.9	5.0	2.6	2.1	0.6
Black locust	31.7	...	8.1	8.3	4.9	3.7	4.2	2.5	...
Other locusts	5.7	...	2.9	0.8	0.5	0.8	...	0.8	...
Sassafras	34.5	...	12.6	8.9	6.4	3.0	2.6	0.9	...
Dogwood	0.3	...	0.3	...	...	...	...	...	...
Holly	0.4	...	...	...	...	0.4	...	...	...
Other commercial	25.3	...	7.0	4.5	2.8	2.5	2.1	5.5	0.8
Total hardwoods	7359.8	...	1564.3	1706.5	1341.9	998.5	703.4	903.2	142.0
All species	9040.8	470.5	2028.3	2017.7	1496.6	1083.9	760.7	1002.6	180.6

Table 36–*Volume of timber on timberland by species and class of timber, Tennessee Counties, 1989*

Species	All live	Growing stock	Rough	Rotten
	Million cubic feet			
Shortleaf pine	650.3	645.4	4.9	...
Loblolly pine	424.0	419.4	4.7	...
Virginia pine	1063.3	1043.3	19.0	1.0
Pitch pine	59.7	57.6	2.1	...
Other s. pines	14.8	14.8	...	...
E. white pine	256.5	254.3	2.1	...
Redcedar	284.4	237.4	43.8	3.1
Hemlock-spruce	143.4	141.8	1.1	0.5
Cypress	85.7	81.4	2.7	1.7
Total softwoods	2982.1	2895.3	80.4	6.3
Select white oaks	2204.4	2097.8	86.6	20.0
Select red oaks	863.0	837.1	16.0	9.9
Other white oaks	1722.1	1572.5	110.0	39.6
Other red oaks	2175.9	2049.7	84.5	41.7
Sweet pecan	3.8	3.8	...	...
Water hickory	3.5	2.9	0.6	...
Other hickories	1680.9	1601.8	63.0	16.0
Persimmon	40.5	38.2	2.2	0.1
Hard maple	548.0	472.6	54.6	20.8
Soft maple	735.5	603.8	94.4	37.3
Boxelder	67.7	40.6	26.0	1.1
Beech	412.1	314.8	40.4	56.8
Sweetgum	611.3	584.9	20.4	6.0
Blackgum	303.6	262.1	27.3	14.2
Other gums/tupelos	14.7	12.5	1.6	0.5
White ash	292.9	255.0	32.5	5.5
Other ashes	197.3	176.4	18.8	2.2
Sycamore	126.3	106.7	8.4	11.2
Cottonwood	33.0	32.6	0.5	...
Basswood	72.7	66.5	2.2	3.9
Yellow-poplar	1699.5	1668.1	20.5	10.9
Magnolia	49.2	46.3	1.9	1.0
Sweetbay	1.5	1.2	0.4	...
Willow	47.9	42.8	3.9	1.2
Black walnut	107.7	91.7	12.6	3.4
Black cherry	118.6	98.3	17.7	2.7
American elm	113.3	91.7	19.6	2.0
Other elms	156.8	139.0	16.8	1.0
River birch	37.0	33.6	3.0	0.5
Other birches	50.1	45.7	3.3	1.2
Hackberry	154.9	110.4	38.8	5.7
Black locust	113.4	88.6	14.0	10.8
Other locusts	22.2	17.2	3.6	1.3
Sassafras	139.6	116.5	18.8	4.3
Dogwood	30.0	10.5	18.6	0.8
Holly	3.7	2.0	1.5	0.2
Other commercial	76.5	51.6	20.6	4.3
Total hardwoods	15031.1	13787.4	905.8	337.9
Noncommercial	266.0	...	266.0	...
All species	18279.2	16682.7	1252.3	344.2

Table 37–*Volume of sawtimber for tree grade 1 on timberland by detailed species and diameter class, Tennessee Counties, 1989*

Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
		Diameter class (inches at breast height)							
	Million board feet								
Shortleaf pine	568.2	114.6	194.7	125.8	92.9	25.6	11.8	2.8	...
Loblolly pine	97.3	10.0	54.4	29.2	3.7	...	...	...	...
Virginia pine	54.4	10.7	18.4	21.2	4.1	...	...	...	...
Pitch pine	10.5	....	1.9	...	3.3	5.3	...	...	...
Other s. pines	4.9	...	4.9	...	...	...	...	...	...
E. white pine	191.9	...	2.4	12.8	18.7	17.7	31.1	78.7	30.5
Redcedar	337.1	159.6	109.3	49.2	14.6	4.4	...	...	...
Hemlock-spruce	27.9	...	...	...	...	...	8.8	14.3	4.9
Cypress	97.0	...	...	...	7.3	8.3	22.6	58.7	...
Total softwoods	1389.2	294.8	386.0	238.3	144.7	61.3	74.3	154.5	35.3
Select white oaks	578.3	...	...	...	96.4	183.5	121.2	161.8	15.4
Select red oaks	494.7	...	...	...	20.3	72.4	101.8	236.2	64.0
Other white oaks	417.3	...	...	...	76.8	113.4	68.7	134.7	23.8
Other red oaks	570.9	...	...	...	40.6	154.0	97.4	216.1	62.9
Sweet pecan	11.2	...	...	...	...	...	...	5.7	5.4
Other hickories	260.0	...	...	...	45.3	80.8	54.6	69.1	10.3
Hard maple	42.6	...	...	...	8.1	14.1	10.6	6.1	3.7
Soft maple	43.4	...	...	...	13.3	5.8	5.6	18.7	...
Boxelder	16.1	...	...	...	9.0	7.1	...	...	...
Beech	6.2	...	...	...	...	...	...	...	6.2
Sweetgum	172.5	...	...	...	69.2	14.7	33.1	42.7	12.8
Blackgum	60.0	...	...	...	8.2	18.0	14.9	17.5	1.4
White ash	99.3	...	...	...	29.2	13.0	20.9	36.1	...
Other ashes	62.9	...	...	...	12.8	32.4	10.6	7.1	...
Sycamore	65.5	...	...	...	3.6	3.3	13.7	36.4	8.5
Cottonwood	116.5	...	...	...	5.3	4.9	4.3	25.3	76.6
Basswood	38.0	...	...	...	8.9	12.5	6.2	10.4	...
Yellow-poplar	999.2	...	...	...	126.4	224.9	237.6	399.9	10.4
Magnolia	8.8	...	...	...	...	8.8	...	...	...
Willow	7.3	...	...	...	...	2.0	...	5.3	...
Black walnut	9.9	...	...	...	5.9	2.0	...	2.0	...
Black cherry	11.4	...	...	...	4.6	6.8	...	...	...
American elm	15.6	...	...	...	...	4.1	3.6	7.9	...
Other elms	6.0	...	...	...	...	...	...	6.0	...
River birch	14.1	...	...	...	...	1.6	4.2	8.3	...
Other birches	7.0	...	...	...	...	...	4.1	...	2.9
Hackberry	4.3	...	...	...	2.5	...	...	1.7	...
Black locust	3.3	...	...	...	...	1.3	2.0	...	...
Sassafras	3.6	...	...	...	2.0	...	...	1.6	...
Other commercial	30.9	...	...	...	1.9	6.7	5.3	12.0	5.0
Total hardwoods	4176.9	...	...	...	590.4	988.0	820.5	1468.7	309.4
All species	5566.1	294.8	386.0	238.3	735.1	1049.3	894.8	1623.3	344.7

Table 38–*Volume of sawtimber for tree grade 2 on timberland by detailed species and diameter class, Tennessee Counties, 1989*

Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Diameter class (inches at breast height)								
	Million board feet								
Shortleaf pine	393.0	107.7	142.7	89.9	29.6	18.2	...	4.9	...
Loblolly pine	165.3	51.0	37.7	33.0	22.0	17.9	3.8	...	...
Virginia pine	182.5	19.0	73.5	49.4	22.3	15.7	...	2.6	...
Pitch pine	32.6	2.1	10.4	9.2	5.0	...	2.2	3.7	...
Other s. pines	4.3	3.2	1.2	...	...	...	...	...	...
E. white pine	419.9	40.7	44.9	32.6	71.6	65.9	62.7	92.1	9.4
Hemlock-spruce	43.5	8.1	12.1	3.1	7.2	...	2.7	10.3	...
Cypress	108.2	...	...	2.7	3.5	3.1	2.6	25.4	70.9
Total softwoods	1349.3	231.8	322.5	219.9	161.1	120.7	74.0	139.0	80.3
Select white oaks	1435.6	...	...	388.8	386.0	300.8	185.0	170.7	4.3
Select red oaks	768.8	...	...	152.6	129.3	134.1	114.6	218.5	19.6
Other white oaks	845.1	...	...	183.4	217.9	136.5	149.1	142.1	16.1
Other red oaks	1246.5	...	...	232.5	281.9	272.0	195.2	237.3	27.7
Sweet pecan	2.7	...	...	...	2.7	...	...	...	...
Other hickories	829.1	...	...	247.2	249.7	145.3	85.0	97.1	4.8
Hard maple	167.1	...	...	36.0	54.6	23.3	27.6	25.6	...
Soft maple	133.8	...	...	24.9	34.5	15.5	34.2	24.6	...
Boxelder	2.6	...	...	...	2.6	...	...	...	...
Beech	41.5	...	...	7.8	13.8	8.3	8.7	2.9	...
Sweetgum	356.1	...	...	113.6	122.5	54.9	22.4	42.7	...
Blackgum	103.8	...	...	34.6	41.2	11.5	6.6	9.9	...
White ash	215.5	...	...	89.3	36.8	42.6	17.7	29.1	...
Other ashes	125.4	...	...	41.3	37.7	30.6	12.9	2.8	...
Sycamore	131.7	...	...	28.2	20.5	19.7	18.9	30.3	14.1
Cottonwood	16.9	...	...	...	4.2	3.0	...	9.7	...
Basswood	68.1	...	...	11.0	20.4	16.7	12.5	7.5	...
Yellow-poplar	1395.6	...	...	236.5	356.4	295.4	235.2	256.9	15.2
Magnolia	26.2	...	...	4.8	9.4	3.0	6.0	3.0	...
Willow	11.4	...	...	3.8	...	3.8	...	3.9	...
Black walnut	39.1	...	...	9.8	16.7	3.1	9.6	...	...
Black cherry	50.6	...	...	17.9	11.6	21.1	...	...	...
American elm	31.1	...	...	4.1	12.7	10.2	2.5	1.6	...
Other elms	17.9	...	...	6.6	8.9	...	1.1	1.2	...
River birch	17.3	...	...	6.5	...	3.0	1.8	6.0	...
Other birches	5.7	...	...	3.1	...	...	2.6	...	...
Hackberry	33.2	...	...	7.4	7.9	8.8	5.5	3.5	...
Black locust	14.5	...	...	1.6	5.7	4.5	2.6	...	...
Sassafras	41.4	...	...	13.6	15.4	5.8	6.7	...	...
Other commercial	13.1	...	...	7.6	...	...	...	5.5	...
Total hardwoods	8187.4	...	...	1914.6	2101.0	1573.7	1164.1	1332.2	101.8
All species	9536.8	231.8	322.5	2134.5	2262.1	1694.4	1238.1	1471.2	182.2

Table 39–*Volume of sawtimber for tree grade 3 on timberland by detailed species and diameter class, Tennessee Counties, 1989*

Species	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Shortleaf pine	1451.9	500.6	477.3	301.1	107.5	41.9	7.4	16.0	...
Loblolly pine	811.4	344.0	225.8	157.0	34.3	18.5	25.3	6.5	...
Virginia pine	2982.0	957.3	969.0	663.0	274.0	79.0	32.9	6.9	...
Pitch pine	149.7	37.1	32.4	33.4	38.7	...	8.1	...	...
Other s. pines	33.5	13.6	12.5	1.5	3.8	...	2.1	...	...
E. white pine	518.3	53.0	80.6	73.2	73.3	76.6	52.4	97.1	12.0
Hemlock-spruce	498.7	51.5	86.3	93.6	55.3	85.7	43.9	76.0	6.5
Cypress	204.9	9.3	1.1	8.4	10.4	10.3	9.4	86.6	69.3
Total softwoods	6650.3	1966.4	1885.0	1331.2	597.3	312.0	181.5	289.0	87.8
Select white oaks	3074.2	...	988.1	907.3	548.4	314.7	139.7	170.8	5.1
Select red oaks	1263.3	...	297.7	342.4	206.9	164.3	123.1	110.1	18.8
Other white oaks	2385.7	...	780.5	645.5	421.9	258.7	124.6	134.8	19.7
Other red oaks	3027.4	...	740.3	842.7	535.6	373.9	251.5	274.9	8.5
Sweet pecan	3.5	...	...	3.5	...	...	...	...	...
Water hickory	3.6	...	1.2	2.4	...	...	...	...	...
Other hickories	2216.4	...	935.2	670.1	280.3	161.2	91.9	57.9	19.9
Persimmon	26.0	...	16.9	...	9.1	...	...	...	...
Hard maple	636.1	...	169.0	159.5	113.4	75.7	59.9	52.7	5.8
Soft maple	571.0	...	193.2	151.3	68.9	74.9	40.0	39.5	3.1
Boxelder	14.5	...	6.6	3.1	4.8	...	...	...	...
Beech	263.6	...	23.4	27.2	46.0	33.2	29.8	80.9	23.1
Sweetgum	849.8	...	329.5	224.3	175.2	50.7	40.4	23.5	6.1
Blackgum	286.1	...	103.0	85.8	44.0	28.0	18.8	6.6	...
Other gums/tupelos	21.4	...	...	9.2	4.2	2.3	4.5	1.2	...
White ash	283.2	...	119.4	52.8	40.3	19.1	34.5	2.7	14.4
Other ashes	230.7	...	107.1	33.4	49.9	24.0	14.3	2.1	...
Sycamore	140.6	...	14.5	20.4	30.7	11.7	36.9	21.5	4.8
Cottonwood	20.3	...	2.9	3.9	...	4.0	3.5	3.0	3.0
Basswood	109.7	...	47.1	35.1	10.2	9.6	4.4	3.4	...
Yellow-poplar	2642.7	...	683.1	746.3	445.0	325.2	199.1	229.4	14.6
Magnolia	53.1	...	21.1	12.5	7.1	...	12.4	...	...
Willow	44.8	...	2.4	1.7	4.1	4.7	16.6	15.4	...
Black walnut	135.5	...	48.6	45.2	24.3	12.5	2.5	2.5	...
Black cherry	53.1	...	15.5	20.5	11.0	6.1	...	...	...
American elm	88.1	...	32.3	29.0	8.3	2.5	9.2	4.7	1.9
Other elms	109.9	...	60.8	31.0	6.7	2.2	9.2	...	...
River birch	29.7	...	13.4	4.9	5.6	3.5	2.3	...	...
Other birches	20.0	...	10.3	4.0	0.9	...	...	4.8	...
Hackberry	77.7	...	19.6	26.1	16.6	12.1	2.0	1.3	...
Black locust	80.5	...	24.6	16.5	12.2	9.5	7.7	9.9	...
Other locusts	3.1	...	1.3	1.8	...	...	...	...	...
Sassafras	106.0	...	55.2	23.8	11.1	9.8	6.1	...	...
Dogwood	1.5	...	1.5	...	...	...	...	...	...
Other commercial	57.3	...	23.4	7.8	9.3	5.4	4.6	6.7	...
Total hardwoods	18930.3	...	5889.0	5190.9	3152.0	1999.7	1289.6	1260.4	148.7
All species	25580.5	1966.4	7774.0	6522.1	3749.4	2311.7	1471.0	1549.4	236.5

Table 40–*Volume of sawtimber for tree grade 4 on timberland by detailed species and diameter class, Tennessee Counties, 1989*

Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
E. white pine	19.2	...	2.6	4.0	...	2.6	10.0	...	...
Total softwoods	19.2	...	2.6	4.0	...	2.6	10.0	...	...
Select white oaks	1278.0	...	373.4	316.4	251.8	117.3	116.4	95.1	7.7
Select red oaks	567.6	...	126.0	131.4	106.8	66.4	45.7	71.8	19.5
Other white oaks	913.2	...	232.2	203.3	181.6	115.6	71.6	94.3	14.6
Other red oaks	1898.1	...	450.3	504.6	336.2	287.8	155.4	144.9	18.9
Water hickory	5.8	...	4.7	1.1	...	...	...	...	...
Other hickories	934.1	...	312.9	229.2	191.0	85.3	57.4	58.2	...
Persimmon	17.8	...	...	3.7	...	...	14.1	...	...
Hard maple	401.2	...	130.1	117.3	45.2	43.1	22.3	43.2	...
Soft maple	379.5	...	115.8	82.2	60.5	36.5	31.2	51.0	2.2
Boxelder	41.2	...	17.3	9.6	6.7	2.4	...	5.2	...
Beech	655.8	...	96.6	139.5	86.8	104.1	68.5	148.6	11.7
Sweetgum	282.5	...	97.3	75.5	45.0	25.9	9.8	26.2	2.7
Blackgum	137.3	...	53.5	33.7	27.0	15.3	4.8	3.0	...
Other gums/tupelos	8.6	...	...	3.6	0.6	4.4	...	...	...
White ash	98.4	...	33.0	35.4	12.6	10.3	...	7.1	...
Other ashes	41.7	...	14.1	5.5	15.5	6.6	...	...	...
Sycamore	53.2	...	5.2	10.7	6.7	4.7	...	19.3	6.6
Cottonwood	4.3	...	...	...	4.3	...	...	...	...
Basswood	21.8	...	5.3	3.8	5.3	...	2.0	5.3	...
Yellow-poplar	1339.9	...	271.9	299.3	297.9	243.4	103.6	100.5	23.1
Magnolia	14.4	...	5.1	9.3	...	...	...	...	...
Willow	66.1	...	9.2	15.1	2.9	...	2.6	30.4	5.9
Black walnut	31.3	...	16.8	10.3	...	1.9	2.4	...	...
Black cherry	36.1	...	7.5	9.3	5.5	5.8	4.3	3.5	...
American elm	69.6	...	12.3	27.2	11.7	2.5	4.1	6.1	5.8
Other elms	70.5	...	19.6	19.6	2.1	15.4	6.9	...	7.0
River birch	13.4	...	4.1	3.9	2.5	2.9	...	...	...
Other birches	17.2	...	10.8	2.6	...	...	...	2.5	1.3
Hackberry	121.5	...	40.5	45.1	13.7	7.1	8.7	2.4	4.0
Black locust	49.0	...	15.0	22.3	7.3	...	4.4	...	...
Other locusts	30.2	...	14.2	2.7	3.4	4.7	...	5.2	...
Sassafras	20.2	...	8.2	6.2	1.3	...	...	4.5	...
Holly	2.4	...	...	...	...	2.4	...	...	...
Other commercial	34.3	...	16.5	5.3	1.9	2.8	2.3	5.5	...
Total hardwoods	9655.9	...	2519.2	2384.5	1734.0	1214.7	738.5	933.8	131.1
All species	9675.0	...	2521.8	2388.5	1734.0	1217.3	748.5	933.8	131.1

Table 41 — *Area of timberland by county and special forest type group, Tennessee Counties, 1989*

County	Total	Special forest type group								
		White pine[1]	Yellow pine[2]	Red cedar	Oak-pine	Oak-hickory[3]	Yellow poplar[4]	Oak-gum-cypress	Other hwd types[5]	Nontyped[6]
	Thousand acres									
Anderson	124.0	...	13.1	...	6.5	84.8	13.1	...	6.5	...
Bedford	74.6	...	...	16.0	10.7	42.6	...	5.3	...	...
Benton	172.7	...	12.8	...	12.8	134.3	6.4	6.4	...	...
Bledsoe	186.3	...	40.7	...	29.1	104.8	11.6	...	...	...
Blount	69.9	3.0	9.1	...	24.3	30.4	3.0	...	...	...
Bradley	92.5	...	30.8	...	15.4	46.3	...	...	...	...
Campbell	250.2	...	23.3	...	29.1	168.8	29.1	...	...	...
Cannon	88.5	...	...	5.2	10.4	72.9	...	...	...	...
Carroll	169.1	...	5.8	...	5.8	122.4	...	35.0	...	...
Carter	155.5	...	8.6	...	17.2	106.7	13.8	...	9.2	...
Cheatham	118.2	...	...	...	...	112.3	5.9	...	...	...
Chester	99.4	...	9.9	...	29.8	39.8	9.9	5.0	5.0	...
Claiborne	167.5	...	...	7.3	21.9	109.3	7.3	...	21.9	...
Clay	105.1	...	...	...	8.1	97.0	...	...	...	...
Cocke	163.4	...	17.0	...	25.9	90.2	24.6	5.7	...	...
Coffee	114.2	...	...	...	...	103.8	5.2	5.2	...	...
Crockett	15.1	...	...	...	...	15.1	...	...	...	...
Cumberland	320.3	5.8	46.6	...	58.2	198.0	11.6	...	...	...
Davidson	108.1	...	...	...	12.7	95.4	...	...	...	...
De Kalb	114.2	...	...	11.4	22.8	74.2	...	5.7	...	...
Decatur	134.8	...	5.4	...	5.4	107.9	10.8	5.4	...	...
Dickson	174.3	...	...	...	6.0	168.3	...	...	...	...
Dyer	40.4	...	...	...	...	10.1	...	30.3	...	...
Fayette	152.0	...	21.7	...	10.9	108.6	...	10.9	...	...
Fentress	244.1	...	52.3	...	40.7	139.5	11.6	...	...	...
Franklin	183.0	...	...	...	11.4	165.9	5.7	...	...	...
Gibson	36.4	...	...	...	...	36.4	...	...	...	...
Giles	171.8	4.9	4.9	...	4.9	152.2	...	4.9	...	...
Grainger	102.6	...	...	...	16.2	86.4	...	...	...	...
Greene	171.8	...	17.1	11.4	21.3	102.3	14.2	...	5.7	...
Grundy	165.9	...	11.4	...	5.7	137.3	5.7	...	...	5.7
Hamblen	32.8	...	8.2	...	8.2	16.4	...	...	...	...
Hamilton	210.7	...	32.9	6.6	39.5	118.5	6.6	6.6	...	...
Hancock	92.9	...	...	...	5.8	63.9	11.6	...	11.6	...
Hardeman	247.1	...	30.9	...	30.9	148.3	6.2	30.9	...	...
Hardin	219.9	...	47.8	...	38.2	100.4	...	33.5	...	...
Hawkins	177.3	...	11.4	...	34.3	120.1	5.7	...	5.7	...
Haywood	71.2	...	...	...	...	11.9	...	59.3	...	...
Henderson	158.4	...	39.6	5.7	5.7	79.2	5.7	22.6	...	...
Henry	176.1	...	6.5	...	...	110.9	13.0	45.6	...	...
Hickman	297.2	...	5.6	...	...	274.8	16.8	...	...	...
Houston	94.2	...	...	...	...	94.2	...	...	...	...
Humphreys	241.2	...	...	...	...	241.2	...	...	...	...
Jackson	135.9	...	...	...	31.4	99.3	5.2	...	...	...
Jefferson	62.2	...	11.3	...	5.7	45.2	...	...	...	...
Johnson	144.4	...	...	...	26.8	94.0	10.1	...	13.4	...
Knox	127.0	...	15.9	...	31.7	55.6	23.8	...	...	...
Lake	18.0	...	...	...	...	...	...	18.0	...	...

Table 41 – *Area of timberland by county and special forest type group, Tennessee Counties, 1989 - Continued*

		Special forest type group								
County	Total	White pine[1]	Yellow pine[2]	Red cedar	Oak-pine	Oak-hickory[3]	Yellow poplar[4]	Oak-gum-cypress	Other hwd types[5]	Nontyped[6]
	Thousand acres									
Lauderdale	88.8	...	...	...	...	24.2	8.1	32.3	24.2	...
Lawrence	199.8	...	...	...	6.9	158.5	27.6	6.9	...	...
Lewis	158.0	...	5.9	...	5.9	134.6	...	11.7	...	...
Lincoln	136.7	...	...	17.8	17.8	89.1	...	11.9	...	...
Loudon	62.3	...	17.0	5.7	11.3	17.0	5.7	...	5.7	...
Macon	77.0	...	...	...	...	63.0	14.0	...	...	...
Madison	140.7	...	...	6.1	24.5	61.2	...	48.9	...	...
Marion	251.7	...	6.0	...	36.0	179.8	24.0	6.0	...	...
Marshall	89.6	...	...	5.0	24.9	59.7	...	...	...	...
Maury	133.0	...	...	6.7	6.7	119.7	...	...	...	...
McMinn	136.5	...	67.2	...	16.8	46.9	...	5.6	...	...
McNairy	224.4	...	46.0	...	40.3	120.8	...	17.3	...	...
Meigs	82.9	...	17.8	...	23.7	35.5	5.9	...	...	...
Monroe	279.0	7.1	77.9	...	76.8	91.8	14.6	...	10.7	...
Montgomery	136.9	...	...	...	12.4	118.2	6.2	...	...	...
Moore	36.6	...	...	...	...	31.4	5.2	...	...	...
Morgan	276.2	...	5.6	...	84.5	186.0	...	...	...	...
Obion	67.6	...	...	...	...	30.7	...	36.8	...	...
Overton	170.4	...	6.8	...	13.6	109.0	40.9	...	...	...
Perry	223.6	...	11.5	...	5.7	189.2	11.5	5.7	...	...
Pickett	68.4	...	...	...	6.8	54.7	6.8	...	...	...
Polk	214.1	12.8	82.7	...	47.8	46.1	14.5	...	10.2	...
Putnam	152.3	...	5.4	5.4	16.3	97.9	27.2	...	...	...
Rhea	126.4	...	11.0	...	27.5	76.9	11.0	...	...	...
Roane	153.1	...	10.6	...	26.4	95.0	21.1	...	...	...
Robertson	53.0	...	...	...	...	53.0	...	...	...	...
Rutherford	155.7	...	...	50.0	38.9	66.7	...	...	...	...
Scott	300.3	5.5	16.4	...	38.2	207.5	32.8	...	...	...
Sequatchie	137.3	5.7	51.5	...	...	74.4	5.7	...	...	...
Sevier	127.5	...	14.2	...	51.9	47.2	14.2	...	...	...
Shelby	111.6	...	...	...	...	52.5	6.6	45.9	6.6	...
Smith	81.0	...	...	13.5	6.8	54.0	6.8	...	...	...
Stewart	219.7	...	...	6.3	...	200.8	12.6	...	...	...
Sullivan	123.6	7.4	4.8	...	20.8	82.1	8.5	...	...	...
Sumner	88.2	...	...	12.6	...	63.0	12.6	...	...	...
Tipton	50.9	...	...	...	...	29.1	7.3	7.3	7.3	...
Trousdale	30.0	...	...	...	12.0	18.0	...	...	...	...
Unicoi	89.4	6.3	...	...	20.8	37.4	25.0	...	...	...
Union	102.5	...	10.8	...	21.6	59.3	...	...	10.8	...
Van Buren	135.4	5.4	32.5	...	10.8	81.3	5.4	...	...	...
Warren	93.6	...	...	...	5.2	83.2	...	5.2	...	...
Washington	50.3	...	...	...	8.9	32.0	9.5	...	...	...
Wayne	372.6	...	37.9	...	18.9	290.5	18.9	6.3	...	...
Weakley	95.9	...	7.4	...	...	36.9	7.4	44.3	...	...
White	129.4	...	22.5	...	5.6	90.0	5.6	5.6	...	...
Williamson	142.0	...	5.3	10.5	15.8	94.7	10.5	5.3	...	...
Wilson	97.0	...	...	15.3	61.2	20.4	...	...	...	...
All counties	13265.3	63.9	1115.3	218.5	1591.4	8748.8	727.9	639.3	154.5	5.7

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[1] White pine forest type group includes white pine, white pine-hemlock, and hemlock forest types.

[2] Yellow pine forest type group includes loblolly pine, shortleaf pine, Virginia pine, pitch pine, and table-mountain pine forest types.

[3] Oak-hickory forest type group includes oak-hickory, post oak-black oak, chestnut oak, white oak-red oak-hickory, white oak, and mixed hardwoods forest types.

[4] Yellow poplar forest type group includes yellow poplar-white oak-Northern red oak, and sweetgum-yellow poplar forest types.

[5] Other hardwood types include cottonwood, willow, and sycamore-pecan-American elm forest types.

[6] Timberland with no current stocking.

Table 42–*Area of timberland by special forest type and ownership class, Tennessee Counties, 1989*

Special forest type group	All ownerships	National forest	Other public	Forest industry	Forest industry-leased	Other private
	Thousand acres					
White pine	64.0	33.6	11.2	4.9	...	14.2
Yellow pine	1115.3	64.8	45.0	257.4	4.8	743.3
Redcedar	218.4	...	18.4	...	...	200.0
Softwood total	1397.7	98.4	74.6	262.3	4.8	957.5
Oak-pine	1591.5	116.7	132.2	112.7	5.7	1224.2
Oak-hickory	8748.6	239.1	572.3	629.8	6.0	7301.5
Yellow poplar	727.9	77.5	37.9	40.9	...	571.6
Oak-gum-cypress	639.3	...	110.2	61.9	5.9	461.2
Other hardwood types	154.4	24.2	25.7	8.1	...	96.5
Hardwood total	11861.7	457.5	878.3	853.4	17.6	9655.0
Nontyped[1]	5.7	...	...	5.7	...	...
All types	13265.1	555.9	952.9	1121.4	22.4	10612.5

[1] Timberland with no current stocking.

Table 43–*Area of timberland by special forest type and stand-size class, Tennessee Counties, 1989*

Special forest type group	All classes	Stand-size class: Sawtimber	Poletimber	Sapling-seedling	Nonstocked[1]
	Thousand acres				
White pine	64.0	56.7	7.3	...	...
Yellow pine	1115.3	498.7	387.0	229.6	...
Redcedar	218.4	40.3	77.1	101.1	...
Softwood total	1397.7	595.7	471.4	330.7	...
Oak-pine	1591.5	612.6	565.0	414.0	...
Oak-hickory	8748.6	4350.7	2983.4	1414.5	...
Yellow poplar	727.9	414.5	195.2	118.2	...
Oak-gum-cypress	639.3	462.8	135.4	41.1	...
Other hardwood types	154.4	85.0	47.1	22.4	...
Hardwood total	11861.7	5925.6	3926.1	2010.2	...
Nontyped[2]	5.7	...	...	...	5.7
All types	13265.1	6521.3	4397.5	2340.9	5.7

[1] Timberland less than 16.7 percent stocked.
[2] Timberland with no current stocking.

Table 44–*Volume of softwood growing stock on timberland by county and special forest type, Tennessee Counties, 1989*

		Special forest type group							
County	Total	White pine	Yellow pine	Red cedar	Oak-pine	Oak-hickory	Yellow poplar	Oak-gum-cypress	Other hwd types
	Million cubic feet								
Anderson	39.4	...	16.9	...	8.9	13.6	...	...	...
Bedford	4.4	...	...	3.5	0.5	...	...	0.4	...
Benton	14.5	...	12.0	...	2.0	0.4	...	...	...
Bledsoe	70.0	...	47.5	...	12.6	5.8	4.1	...	...
Blount	41.7	6.1	14.5	...	15.7	5.2	0.3	...	...
Bradley	52.2	...	48.2	...	...	4.0	...	...	...
Campbell	56.4	...	25.1	...	21.9	7.3	2.0	...	...
Cannon	9.1	...	...	2.8	5.5	0.8	...	...	...
Carroll	18.7	...	7.1	...	5.7	5.9	...	...	...
Carter	42.0	...	4.1	...	20.1	14.9	1.9	...	1.0
Cheatham	5.2	...	...	...	...	5.2	...	...	...
Chester	30.6	...	11.4	...	16.4	2.2	0.6	...	...
Claiborne	11.5	...	...	2.2	5.9	2.0	1.4	...	...
Clay	3.4	...	...	...	1.2	2.3	...	...	...
Cocke	47.6	...	19.2	...	14.5	11.3	2.7	...	...
Coffee	...	...	...	...	...	...	...	...	...
Crockett	...	...	...	...	...	...	...	...	...
Cumberland	123.1	8.9	47.6	...	36.9	26.8	3.0	...	...
Davidson	4.4	...	...	...	1.3	3.1	...	...	...
De Kalb	13.6	...	...	5.3	8.0	0.3	...	...	...
Decatur	24.7	...	17.8	...	3.3	3.6	...	...	...
Dickson	1.2	...	...	...	1.2	...	...	...	...
Dyer	...	...	...	...	...	...	...	...	...
Fayette	20.7	...	14.3	...	2.7	3.7	...	...	...
Fentress	128.4	...	59.4	...	35.3	32.7	1.0	...	...
Franklin	4.4	...	...	...	2.5	1.9	...	...	...
Gibson	...	...	...	...	...	...	...	...	...
Giles	5.1	3.5	0.2	...	...	1.4	...	...	...
Grainger	18.2	...	...	...	8.4	9.8	...	...	...
Greene	41.6	...	20.1	0.2	14.1	5.8	1.3	...	...
Grundy	31.9	...	21.3	...	2.4	8.1	...	...	...
Hamblen	21.1	...	17.1	...	3.6	0.5	...	...	...
Hamilton	92.0	...	43.5	...	31.0	15.3	2.2	...	...
Hancock	3.6	...	...	...	2.2	1.5	...	...	...
Hardeman	58.6	...	42.0	...	7.6	6.9	...	2.1	...
Hardin	66.0	...	36.5	...	20.6	7.8	...	1.0	...
Hawkins	27.8	...	9.4	...	13.9	4.0	0.5	...	...
Haywood	...	...	...	...	...	...	...	...	...
Henderson	39.5	...	36.3	1.4	1.3	0.3	...	0.2	...
Henry	2.9	...	2.2	...	...	0.6	...	...	...
Hickman	13.7	...	8.9	...	...	4.4	0.4	...	...
Houston	0.5	...	...	...	...	0.5	...	...	...
Humphreys	3.5	...	...	...	...	3.5	...	...	...
Jackson	10.2	...	...	...	9.1	1.1	...	...	...
Jefferson	15.5	...	12.9	...	0.8	1.8	...	...	...
Johnson	30.2	...	...	...	13.7	15.9	0.2	...	0.4
Knox	39.7	...	10.3	...	21.9	5.7	1.8	...	...

Table 44–*Volume of softwood growing stock on timberland by county and special forest type, Tennessee Counties, 1989 - Continued*

County	Total	Special forest type group							
		White pine	Yellow pine	Red cedar	Oak-pine	Oak-hickory	Yellow poplar	Oak-gum-cypress	Other hwd types
	Million cubic feet								
Lake	38.8	...	...	...	...	...	...	38.8	...
Lauderdale	20.0	...	...	...	...	...	...	16.6	3.4
Lawrence	...	...	...	...	...	...	...	...	...
Lewis	1.6	...	...	...	...	1.6	...	...	...
Lincoln	9.7	...	...	7.1	1.1	1.6	...	...	...
Loudon	43.3	...	35.0	1.3	7.0	...	...	...	...
Macon	0.3	...	...	...	...	0.3	...	...	...
Madison	8.1	...	...	3.2	2.3	1.8	...	0.8	...
Marion	41.1	...	0.9	...	18.4	20.9	0.8	...	...
Marshall	5.9	...	...	2.4	1.5	2.0	...	...	...
Maury	0.5	...	...	0.3	...	0.2	...	...	...
McMinn	107.9	...	91.2	...	11.3	5.4	...	...	...
McNairy	78.5	...	58.5	...	15.7	3.7	...	0.6	...
Meigs	55.4	...	32.0	...	15.2	8.2	...	...	...
Monroe	201.5	11.1	105.4	...	53.7	27.3	3.7	...	0.4
Montgomery	8.4	...	...	...	4.8	3.6	...	...	...
Moore	2.7	...	...	...	...	2.7	...	...	...
Morgan	89.5	...	1.2	...	57.1	31.2	...	...	...
Obion	12.9	...	...	...	...	...	...	12.9	...
Overton	31.5	...	15.4	...	9.5	6.6	...	...	...
Perry	7.4	...	2.9	...	0.4	4.2	...	...	...
Pickett	7.0	...	...	...	...	7.0	...	...	...
Polk	197.9	34.0	117.6	...	34.2	5.3	5.1	...	1.7
Putnam	18.9	...	...	...	12.6	5.2	1.1	...	...
Rhea	44.1	...	13.6	...	26.0	4.6	...	...	...
Roane	46.1	...	20.2	...	16.6	8.6	0.6	...	...
Robertson	0.4	...	...	...	...	0.4	...	...	...
Rutherford	11.7	...	...	7.3	3.8	0.7	...	...	...
Scott	107.1	16.9	18.4	...	35.2	35.8	0.7	...	...
Sequatchie	54.1	6.0	33.0	...	...	15.0	...	...	...
Sevier	69.1	...	14.4	...	45.8	5.4	3.5	...	...
Shelby	1.7	...	...	...	...	0.4	...	1.3	...
Smith	4.2	...	...	...	1.4	2.8	...	...	...
Stewart	6.2	...	...	5.4	...	0.8	...	...	...
Sullivan	33.2	13.2	5.7	...	9.6	4.7	...	...	...
Sumner	3.6	...	...	3.6	...	...	...	...	...
Tipton	...	...	...	...	...	...	...	...	...
Trousdale	4.8	...	...	...	3.1	1.7	...	...	...
Unicoi	46.5	13.1	...	...	18.8	5.1	9.5	...	...
Union	23.2	...	2.0	...	17.3	4.0	...	...	...
Van Buren	42.2	7.8	21.1	...	7.4	5.9	...	...	...
Warren	...	...	...	...	...	...	...	...	...
Washington	20.3	...	...	...	8.6	2.8	8.9	...	...
Wayne	23.0	...	11.9	...	3.2	7.9	...	...	...
Weakley	20.8	...	16.0	...	...	0.9	...	3.8	...
White	26.0	...	21.4	...	3.4	1.2	...	...	...
Williamson	14.6	...	1.7	4.7	6.0	2.2	...	...	...
Wilson	14.7	...	...	3.2	10.4	1.0	...	...	...
All counties	2895.2	120.6	1245.3	53.9	834.1	498.6	57.3	78.5	6.9

Table 45–*Volume of hardwood growing stock on timberland by county and special forest type, Tennessee Counties, 1989*

		Special forest type group							
County	Total	White pine	Yellow pine	Red cedar	Oak-pine	Oak-hickory	Yellow poplar	Oak-gum-cypress	Other hwd types
	Million cubic feet								
Anderson	159.8	...	4.2	...	5.0	122.3	20.7	...	7.6
Bedford	46.4	...	...	1.9	0.2	39.1	...	5.2	...
Benton	161.4	...	0.4	...	1.9	145.7	11.8	1.6	...
Bledsoe	117.6	...	3.7	...	14.8	84.7	14.5	...	...
Blount	69.3	3.0	1.3	...	15.4	44.4	5.2	...	...
Bradley	61.7	...	8.2	...	0.3	53.1	...	...	...
Campbell	297.6	...	5.9	...	14.9	234.6	42.3	...	...
Cannon	83.1	...	...	2.0	9.1	72.0	...	...	...
Carroll	233.7	...	1.1	...	6.8	170.9	...	54.9	...
Carter	235.6	...	1.0	...	12.7	181.0	27.2	...	13.7
Cheatham	140.5	...	...	...	...	129.0	11.5	...	...
Chester	73.4	...	1.2	...	17.5	36.7	13.7	3.9	0.3
Claiborne	184.8	...	...	0.6	6.5	144.7	13.5	...	19.4
Clay	85.2	...	...	...	2.7	82.5	...	...	...
Cocke	190.4	...	6.2	...	18.0	115.7	42.3	8.2	...
Coffee	154.3	...	...	...	...	139.5	7.5	7.3	...
Crockett	33.0	...	...	...	...	33.0	...	...	...
Cumberland	295.2	5.0	5.7	...	39.7	230.7	14.1	...	...
Davidson	110.0	...	...	...	4.1	105.9	...	...	...
De Kalb	153.2	...	...	1.6	10.8	124.3	...	16.5	...
Decatur	181.8	...	6.7	...	4.5	151.7	9.7	9.2	...
Dickson	215.6	...	...	...	3.6	212.1	...	...	...
Dyer	51.5	...	...	...	...	16.1	...	35.4	...
Fayette	180.9	...	6.8	...	7.8	138.6	...	27.8	...
Fentress	235.1	...	7.5	...	39.9	167.3	20.5	...	...
Franklin	171.4	...	...	...	3.0	152.3	16.1	...	...
Gibson	47.0	...	...	...	...	47.0	...	...	...
Giles	146.3	2.6	...	...	...	141.5	...	2.2	...
Grainger	138.0	...	...	...	10.2	127.8	...	...	...
Greene	205.2	...	8.0	0.6	16.3	133.7	28.5	...	18.1
Grundy	162.5	...	4.7	...	6.3	144.4	7.1	...	...
Hamblen	49.2	...	2.6	...	7.6	39.0	...	..	...
Hamilton	156.8	...	10.6	...	17.0	125.5	3.3	0.5	...
Hancock	61.6	...	...	...	2.1	45.1	8.5	...	6.0
Hardeman	239.1	...	3.5	...	11.6	169.6	7.3	47.1	...
Hardin	192.4	...	6.8	...	21.9	115.4	...	48.2	...
Hawkins	164.1	...	...	...	17.6	131.9	4.5	...	10.0
Haywood	122.5	...	...	...	...	9.7	...	112.8	...
Henderson	175.0	...	10.4	3.1	3.8	112.3	3.5	41.9	...
Henry	228.2	...	0.6	...	...	136.8	23.2	67.5	...
Hickman	332.0	...	0.4	...	...	307.3	24.3	...	...
Houston	113.4	...	...	...	...	113.4	...	...	...
Humphreys	268.8	...	...	...	...	268.8	...	...	...
Jackson	156.4	...	...	...	11.1	135.1	10.1	...	...
Jefferson	82.7	...	7.3	...	2.0	73.4	...	...	...
Johnson	162.9	...	...	...	21.9	108.1	12.5	...	20.4
Knox	129.9	...	1.2	...	17.2	50.5	61.0	...	...
Lake	33.2	...	...	...	...	...	...	33.2	...

Table 45–*Volume of hardwood growing stock on timberland by county and special forest type, Tennessee Counties, 1989 - Continued*

County	Total	Special forest type group							
		White pine	Yellow pine	Red cedar	Oak-pine	Oak-hickory	Yellow poplar	Oak-gum-cypress	Other hwd types
	Million cubic feet								
Lauderdale	114.2	...	...	...	...	16.9	16.3	50.7	30.2
Lawrence	173.3	...	...	...	...	142.2	19.8	11.3	...
Lewis	163.2	...	...	...	...	147.9	...	15.3	...
Lincoln	104.4	...	...	4.1	3.7	88.5	...	8.1	...
Loudon	54.2	...	2.0	0.3	7.4	33.5	10.5	...	0.5
Macon	104.9	...	...	...	...	83.3	21.6	...	...
Madison	201.1	...	...	0.7	8.8	115.6	...	76.0	...
Marion	224.3	...	...	...	18.3	187.0	15.1	3.9	...
Marshall	45.7	...	...	1.3	6.8	37.6	...	...	...
Maury	107.8	...	...	...	1.5	106.3	...	...	...
McMinn	107.1	...	22.5	...	9.8	67.1	...	7.7	...
McNairy	154.7	...	10.9	...	20.9	98.2	...	24.7	...
Meigs	71.1	...	3.7	...	17.3	42.2	7.9	...	...
Monroe	275.9	1.5	23.2	...	47.1	149.4	23.6	...	31.0
Montgomery	134.6	...	...	...	8.4	114.0	12.3	...	...
Moore	52.6	...	...	...	...	46.1	6.5	...	...
Morgan	279.2	...	...	...	59.5	219.7	...	...	...
Obion	128.5	...	...	...	...	71.1	...	57.4	...
Overton	259.9	...	2.2	...	12.7	174.1	71.0	...	...
Perry	240.5	...	1.8	...	2.2	210.0	22.0	4.5	...
Pickett	85.9	...	...	...	...	77.9	8.0	...	...
Polk	128.2	12.8	28.0	...	26.3	44.7	11.7	...	4.7
Putnam	183.9	...	0.3	...	7.6	138.4	37.6	...	...
Rhea	136.0	...	0.4	...	19.4	93.5	22.7	...	...
Roane	182.7	...	3.3	...	18.1	120.5	40.8	...	...
Robertson	65.9	...	...	...	...	65.9	...	...	...
Rutherford	40.6	...	...	3.4	11.8	25.4	...	...	...
Scott	383.1	4.0	6.8	...	25.0	297.9	49.3	...	...
Sequatchie	80.3	1.5	11.2	...	...	59.8	7.8	...	...
Sevier	114.4	...	3.4	...	35.0	66.2	9.8	...	...
Shelby	187.4	...	...	...	...	87.6	10.4	80.5	8.9
Smith	74.9	...	...	...	3.2	53.0	18.7	...	...
Stewart	230.1	...	...	3.7	...	202.9	23.5	...	...
Sullivan	126.8	5.0	0.6	...	14.7	89.4	17.1	...	...
Sumner	75.8	...	...	1.1	...	56.5	18.1	...	...
Tipton	76.6	...	...	...	...	37.4	20.4	7.5	11.2
Trousdale	20.6	...	...	...	4.1	16.5	...	...	...
Unicoi	123.7	3.1	...	...	15.4	50.0	55.3	...	...
Union	100.0	...	2.2	...	15.5	66.4	...	...	15.9
Van Buren	107.5	4.9	2.4	...	4.3	91.2	4.6	...	...
Warren	111.6	...	...	...	0.5	103.1	...	8.0	...
Washington	76.1	...	...	...	6.7	50.5	19.0	...	...
Wayne	311.0	...	2.8	...	5.5	286.7	11.9	4.1	...
Weakley	118.9	...	0.9	...	...	45.9	...	72.1	...
White	172.3	...	1.8	...	4.1	142.2	20.2	4.0	...
Williamson	149.1	...	0.7	0.9	6.8	114.1	18.6	8.0	...
Wilson	36.7	...	...	1.4	19.1	16.2	...	...	...
All counties	13787.0	43.4	247.1	26.7	873.3	10314.7	1116.5	967.2	197.9

Table 46–*Volume of softwood sawtimber on timberland by county and special forest type, Tennessee Counties, 1989*

County	Total	Special forest type group							
		White pine	Yellow pine	Red cedar	Oak-pine	Oak-hickory	Yellow poplar	Oak-gum-cypress	Other hwd types
	Million board feet								
Anderson	163.0	...	65.4	...	43.2	54.3	...	...	...
Bedford	4.6	...	...	2.3	2.3	...	...	...	...
Benton	13.7	...	11.1	...	1.6	1.0	...	...	...
Bledsoe	180.4	...	95.5	...	56.0	16.4	12.5	...	...
Blount	150.8	28.3	48.0	...	55.4	17.7	1.5	...	...
Bradley	188.0	...	168.4	...	...	19.6	...	...	...
Campbell	192.3	...	83.3	...	76.1	27.1	5.7	...	...
Cannon	9.3	...	...	5.2	4.1	...	...	...	...
Carroll	83.1	...	31.6	...	30.2	21.3	...	...	...
Carter	164.1	...	6.0	...	81.2	65.1	9.6	...	2.2
Cheatham	14.0	...	...	...	...	14.0	...	...	...
Chester	116.0	...	41.5	...	63.9	7.4	3.2	...	...
Claiborne	39.1	...	...	2.0	20.8	8.8	7.5	...	...
Clay	8.7	...	...	...	...	8.7	...	...	...
Cocke	173.2	...	64.9	...	58.0	39.5	10.7	...	...
Coffee	...	...	...	...	...	...	...	...	...
Crockett	...	...	...	...	...	...	...	...	...
Cumberland	437.7	36.9	130.1	...	147.6	112.5	10.7	...	...
Davidson	6.2	...	...	...	2.0	4.2	...	...	...
De Kalb	21.9	...	...	10.8	11.1	...	...	...	...
Decatur	100.3	...	78.6	...	11.7	10.0	...	...	...
Dickson	...	...	...	...	...	...	...	...	...
Dyer	...	...	...	...	...	...	...	...	...
Fayette	44.9	...	30.3	...	4.5	10.1	...	...	...
Fentress	403.2	...	127.6	...	151.3	119.7	4.7	...	...
Franklin	6.3	...	...	...	3.1	3.2	...	...	...
Gibson	...	...	...	...	...	...	...	...	...
Giles	13.7	9.8	...	...	...	3.9	...	...	...
Grainger	53.8	...	...	...	20.0	33.8	...	...	...
Greene	128.6	...	50.1	...	54.2	20.7	3.6	...	...
Grundy	71.0	...	45.8	...	3.6	21.7	...	...	...
Hamblen	78.3	...	69.7	...	8.6	...	...	...	...
Hamilton	363.6	...	167.3	...	119.4	70.9	5.9	...	...
Hancock	11.0	...	...	...	1.2	9.7	...	...	...
Hardeman	206.8	...	164.8	...	14.7	21.1	...	6.3	...
Hardin	168.6	...	90.6	...	54.8	20.1	...	3.1	...
Hawkins	76.4	...	14.0	...	49.3	10.5	2.6	...	...
Haywood	...	...	...	...	...	...	...	...	...
Henderson	105.0	...	96.1	3.8	5.1	...	...	...	...
Henry	9.2	...	9.2	...	...	...	...	...	...
Hickman	39.0	...	32.3	...	...	6.7	...	...	...
Houston	1.6	...	...	...	...	1.6	...	...	...
Humphreys	12.7	...	...	...	...	12.7	...	...	...
Jackson	19.7	...	...	...	17.2	2.5	...	...	...
Jefferson	51.8	...	46.0	...	1.3	4.4	...	...	...
Johnson	119.1	...	...	...	54.3	64.3	0.5	...	...
Knox	112.7	...	24.9	...	62.1	16.6	9.1	...	...
Lake	200.2	...	...	...	...	...	...	200.2	...

Table 46–*Volume of softwood sawtimber on timberland by county and special forest type, Tennessee Counties, 1989 - Continued*

County	Total	Special forest type group							
		White pine	Yellow pine	Red cedar	Oak-pine	Oak-hickory	Yellow poplar	Oak-gum-cypress	Other hwd types
	Million board feet								
Lauderdale	105.3	...	...	...	...	...	...	83.7	21.6
Lawrence	...	...	...	...	...	...	...	...	...
Lewis	4.9	...	...	...	...	4.9	...	...	...
Lincoln	5.1	...	...	5.1	...	...	...	...	...
Loudon	155.1	...	122.0	2.4	30.7	...	...	...	...
Macon	...	...	...	...	...	...	...	...	...
Madison	19.7	...	...	11.0	1.4	4.5	...	2.7	...
Marion	151.4	...	...	...	69.2	79.2	2.9	...	...
Marshall	6.9	...	...	4.5	1.3	1.1	...	...	...
Maury	...	...	...	...	...	...	...	...	...
McMinn	307.4	...	226.4	...	59.6	21.4	...	...	...
McNairy	232.4	...	180.9	...	37.3	10.7	...	3.5	...
Meigs	166.0	...	76.3	...	56.1	33.6	...	...	...
Monroe	692.9	42.8	331.3	...	178.0	119.5	20.1	...	1.2
Montgomery	18.7	...	...	...	10.0	8.8	...	...	...
Moore	7.1	...	...	...	...	7.1	...	...	...
Morgan	350.5	...	...	...	202.8	147.7	...	...	...
Obion	67.1	...	...	...	...	...	...	67.1	...
Overton	145.3	...	83.0	...	38.1	24.1	...	...	...
Perry	13.7	...	5.0	...	...	8.7	...	...	...
Pickett	23.3	...	...	...	...	23.3	...	...	...
Polk	767.2	177.2	396.1	...	138.5	21.7	24.0	...	9.6
Putnam	74.9	...	...	...	47.9	21.9	5.1	..	...
Rhea	108.9	...	21.1	...	70.5	17.2	...	...	...
Roane	195.2	...	88.5	...	71.7	32.8	2.1	...	...
Robertson	1.8	...	...	...	...	1.8	...	...	...
Rutherford	6.1	...	...	2.6	3.3	0.3	...	...	...
Scott	396.9	64.3	58.1	...	123.0	147.0	4.4	...	...
Sequatchie	160.2	24.5	82.9	...	...	52.8	...	...	...
Sevier	247.4	...	41.0	...	169.9	23.9	12.6	...	...
Shelby	7.8	...	...	...	...	1.8	...	6.0	...
Smith	1.4	...	...	...	...	1.4	...	...	...
Stewart	22.0	...	...	20.0	...	2.1	...	...	...
Sullivan	122.1	58.5	21.2	...	30.4	12.0	...	...	...
Sumner	4.3	...	...	4.3	...	...	...	...	...
Tipton	...	...	...	...	...	...	...	...	...
Trousdale	0.5	...	...	...	0.5	...	...	...	...
Unicoi	223.0	73.2	...	...	86.2	20.2	43.4	...	...
Union	62.3	...	3.2	...	47.5	11.7	...	...	...
Van Buren	97.9	39.9	36.7	...	8.0	13.3	...	...	...
Warren	...	...	...	...	...	...	...	...	...
Washington	87.2	...	...	...	31.0	9.0	47.3	...	...
Wayne	38.6	...	21.2	...	2.3	15.1	...	...	...
Weakley	72.5	...	50.0	...	...	2.8	...	19.7	...
White	33.5	...	20.0	...	10.0	3.5	...	...	...
Williamson	23.5	...	0.9	8.4	8.3	6.0	...	...	...
Wilson	23.8	...	...	1.5	22.2	...	...	...	...
All counties	9615.4	555.4	3658.9	83.9	2845.6	1794.7	249.7	392.3	34.6

Table 47–*Volume of hardwood sawtimber on timberland by county and special forest type, Tennessee Counties, 1989*

County	Total	Special forest type group							
		White pine	Yellow pine	Red cedar	Oak-pine	Oak-hickory	Yellow poplar	Oak-gum-cypress	Other hwd types
	Million board feet								
Anderson	628.6	...	7.8	...	22.5	502.1	78.8	...	17.4
Bedford	136.6	...	...	8.0	...	107.2	...	21.4	...
Benton	431.1	...	...	...	2.0	429.1	...	...	...
Bledsoe	277.2	...	4.6	...	30.7	212.0	29.9	...	...
Blount	214.4	10.4	0.9	...	40.7	150.0	12.5	...	...
Bradley	234.9	...	13.9	...	0.6	220.4	...	...	...
Campbell	1143.6	...	15.5	...	51.9	933.9	142.3	...	...
Cannon	234.4	...	...	3.4	5.6	225.4	...	...	...
Carroll	721.8	...	4.2	...	29.8	544.7	...	143.1	...
Carter	794.9	...	1.4	...	22.3	672.2	82.9	...	16.1
Cheatham	426.1	...	...	...	...	386.0	40.0	...	...
Chester	180.3	...	4.6	...	44.5	101.3	22.0	7.9	...
Claiborne	614.2	...	...	2.8	6.4	495.9	44.3	...	64.7
Clay	204.2	...	...	...	7.8	196.5	...	...	...
Cocke	618.2	...	16.0	...	39.1	385.4	150.6	27.0	...
Coffee	486.6	...	...	...	...	437.4	21.9	27.4	...
Crockett	165.2	...	...	...	...	165.2	...	...	...
Cumberland	839.1	18.3	12.4	...	112.7	660.2	35.4	...	...
Davidson	374.5	...	...	...	...	374.5	...	...	...
De Kalb	501.6	...	...	...	6.8	427.3	...	67.5	...
Decatur	571.9	...	9.4	...	14.2	484.3	25.3	38.6	...
Dickson	738.3	...	...	...	8.3	730.0	...	...	...
Dyer	225.9	...	...	...	...	71.2	...	154.7	...
Fayette	593.2	...	5.9	...	25.4	485.2	...	76.7	...
Fentress	654.5	...	14.6	...	74.2	512.3	53.4	...	...
Franklin	568.2	...	...	...	3.6	483.2	81.4	...	...
Gibson	155.9	...	...	...	...	155.9	...	...	...
Giles	334.1	6.0	...	...	...	321.5	...	6.6	...
Grainger	468.5	...	...	...	28.6	439.9	...	...	...
Greene	727.4	...	23.7	1.6	25.1	476.5	112.1	...	88.4
Grundy	448.1	...	12.8	...	13.4	407.5	14.4	...	...
Hamblen	198.2	...	3.2	...	44.9	150.1	...	...	...
Hamilton	526.9	...	24.1	...	44.0	448.1	10.7	...	...
Hancock	202.2	...	...	...	...	178.2	16.6	...	7.4
Hardeman	748.5	...	7.4	...	31.0	555.1	8.3	146.7	...
Hardin	520.6	...	11.0	...	51.8	318.9	...	138.9	...
Hawkins	531.4	...	...	...	30.8	426.9	25.1	...	48.7
Haywood	488.5	...	...	...	...	36.7	...	451.8	...
Henderson	541.5	...	25.5	4.8	6.4	348.1	9.4	147.3	...
Henry	826.6	...	...	...	...	475.0	68.2	283.4	...
Hickman	867.3	...	...	...	...	769.1	98.2	...	...
Houston	357.6	...	...	...	...	357.6	...	...	...
Humphreys	770.9	...	...	...	...	770.9	...	...	...
Jackson	564.1	...	...	...	32.0	494.0	38.1	...	...
Jefferson	317.0	...	21.1	...	4.9	291.0	...	...	...
Johnson	489.1	...	...	...	72.7	277.6	56.3	...	82.5
Knox	516.1	...	5.7	...	59.0	176.0	275.4	...	...
Lake	146.5	...	...	...	...	...	...	146.5	...

Table 47–*Volume of hardwood sawtimber on timberland by county and special forest type, Tennessee Counties, 1989 - Continued*

		Special forest type group							
County	Total	White pine	Yellow pine	Red cedar	Oak-pine	Oak-hickory	Yellow poplar	Oak-gum-cypress	Other hwd types
	Million board feet								
Lauderdale	518.1	...	...	...	...	62.2	65.4	232.6	157.8
Lawrence	480.9	...	...	...	...	375.2	52.6	53.2	...
Lewis	425.6	...	...	...	...	371.0	...	54.5	...
Lincoln	271.4	....	...	6.9	3.7	252.9	...	7.9	...
Loudon	223.8	...	3.7	0.7	24.9	158.3	36.2	...	...
Macon	378.0	...	...	...	...	313.7	64.3	...	...
Madison	709.4	...	...	...	15.5	410.1	...	283.9	...
Marion	695.5	...	...	...	51.9	600.1	30.6	13.0	...
Marshall	146.8	...	...	2.9	18.8	125.0	...	...	...
Maury	241.8	...	...	...	1.7	240.1	...	...	...
McMinn	362.6	...	40.6	...	38.9	255.2	...	28.0	...
McNairy	377.8	...	18.0	...	39.3	269.2	...	51.3	...
Meigs	201.4	...	6.3	...	54.0	117.4	23.7	...	...
Monroe	844.3	3.0	35.6	...	134.8	444.0	85.5	...	141.5
Montgomery	385.6	...	...	...	27.6	315.6	42.5	...	...
Moore	185.5	...	...	...	...	163.2	22.3	...	...
Morgan	972.5	...	...	...	202.5	770.0	...	...	...
Obion	545.9	...	...	...	...	331.2	...	214.8	...
Overton	927.5	...	12.1	...	42.6	592.3	280.6	...	...
Perry	615.3	...	...	...	1.3	529.6	70.0	14.4	...
Pickett	271.9	...	...	...	...	251.0	20.9	...	...
Polk	426.5	48.5	86.3	...	94.7	145.8	45.0	...	6.2
Putnam	633.8	...	...	...	17.6	502.5	113.7	...	...
Rhea	401.5	...	...	...	46.0	293.3	62.2	...	...
Roane	538.3	...	11.8	...	51.5	338.1	137.0	...	...
Robertson	260.7	...	...	...	...	260.7	...	...	...
Rutherford	89.0	...	...	3.6	24.9	60.6	...	...	...
Scott	1168.6	21.1	9.9	...	54.5	903.4	179.6	...	...
Sequatchie	211.7	...	25.6	...	...	165.9	20.2	...	...
Sevier	376.5	...	2.3	...	104.0	242.6	27.7	...	...
Shelby	671.0	...	...	...	...	342.4	28.8	266.6	33.2
Smith	201.4	...	...	...	5.2	125.7	70.4	...	...
Stewart	748.5	...	...	15.2	...	656.4	76.9	...	...
Sullivan	366.6	8.4	2.4	...	28.1	264.7	63.0	...	...
Sumner	271.1	...	...	3.1	...	191.5	76.6	...	...
Tipton	280.7	...	...	...	...	150.7	91.5	29.2	9.2
Trousdale	49.3	...	...	...	8.0	41.4	...	...	...
Unicoi	396.0	1.6	...	...	47.4	170.3	176.7	...	...
Union	358.6	...	5.7	...	44.3	247.2	...	...	61.4
Van Buren	343.2	20.2	4.2	...	5.2	294.6	19.1	...	...
Warren	370.5	...	...	...	2.4	340.1	...	27.9	...
Washington	288.0	...	...	...	25.8	170.9	91.4	...	...
Wayne	759.7	...	6.6	...	11.3	705.8	23.4	12.7	...
Weakley	448.3	...	...	...	...	160.2	...	288.1	...
White	631.8	...	3.9	...	10.5	508.5	105.9	2.9	...
Williamson	521.9	...	...	1.3	10.8	418.1	54.1	37.6	...
Wilson	76.9	...	...	2.3	30.5	44.2	...	...	...
All counties	43998.2	137.5	520.7	56.6	2273.9	32960.4	3811.3	3504.1	734.5

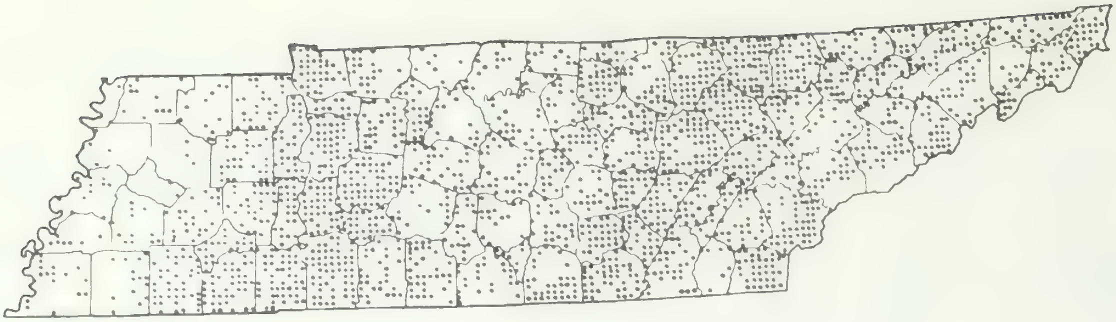

Figure 1.—*Location of Forest Inventory and Analysis plots on timberland, Tennessee, 1989.*

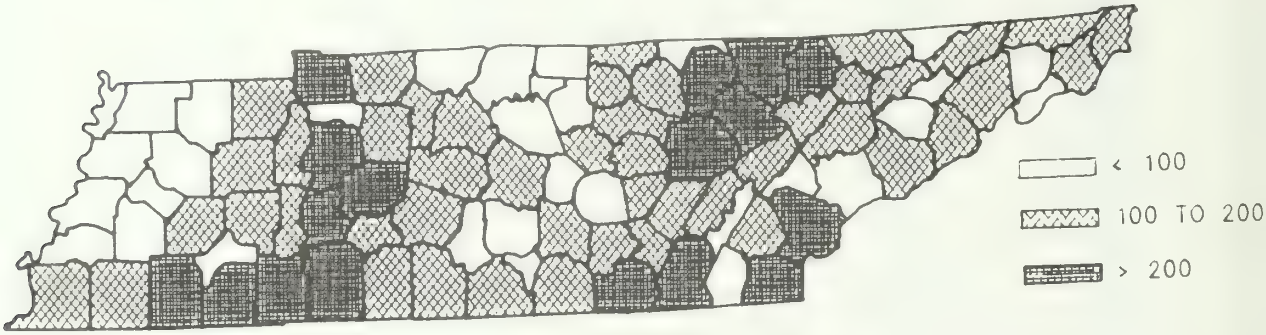

Figure 2.—*Total timberland by county in thousand acres, Tennessee, 1989.*

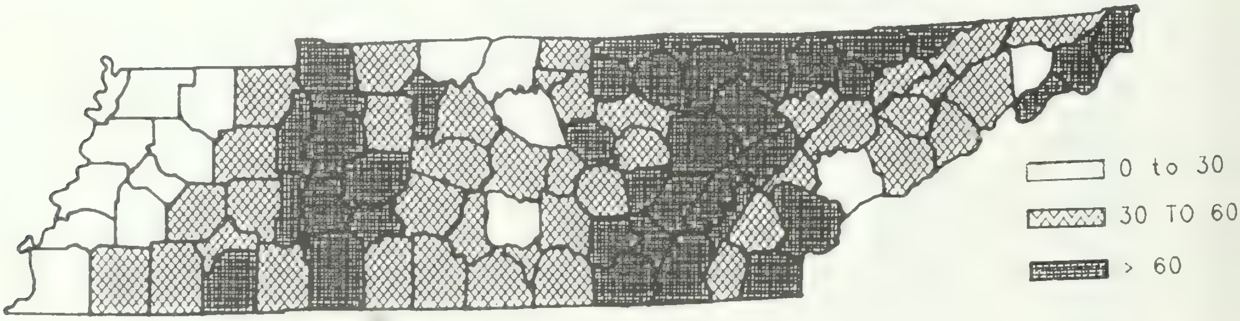

Figure 3.—*Percent timberland of total land area by county, Tennessee, 1989.*

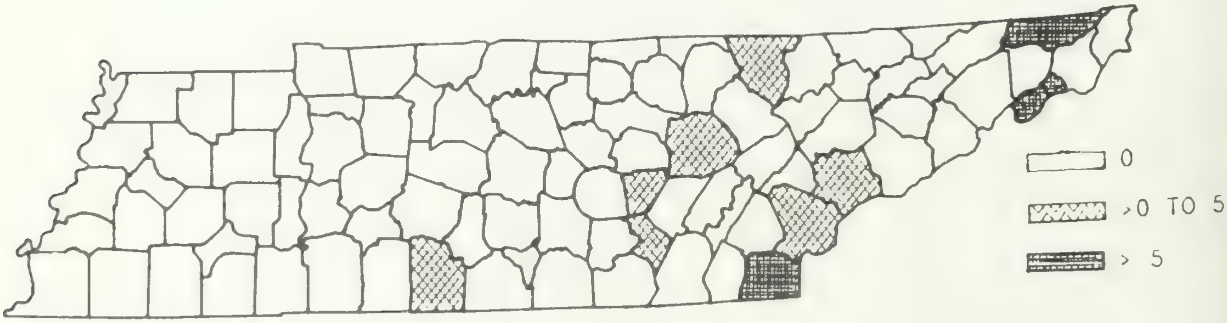

Figure 4.—*Percent timberland by county, White Pine/Hemlock forest type (see table 41), Tennessee, 1989.*

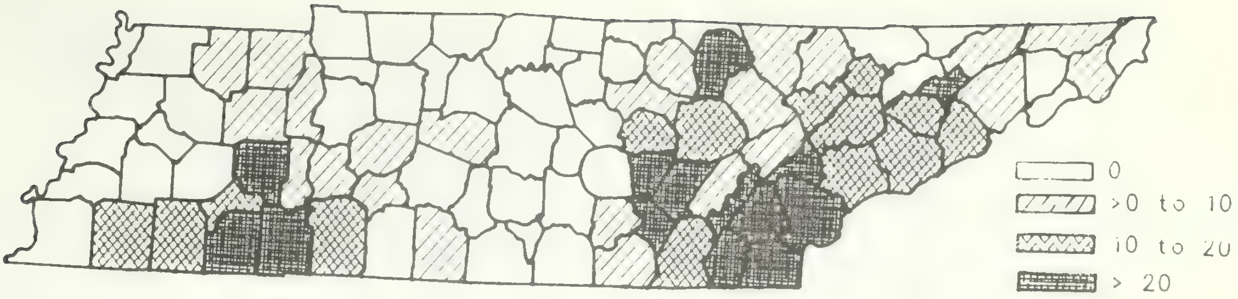

Figure 5.—*Percent timberland by county, Yellow Pine forest type (see table 41), Tennessee, 1989.*

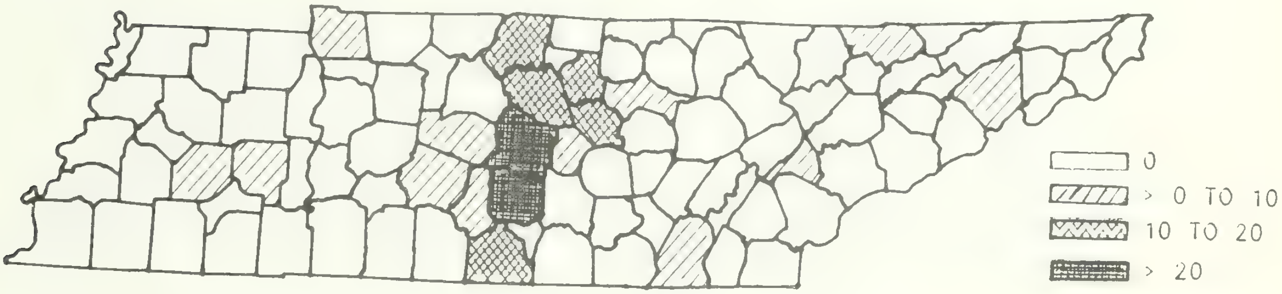

Figure 6.—*Percent timberland by county, Red Cedar forest type (see table 41), Tennessee, 1989.*

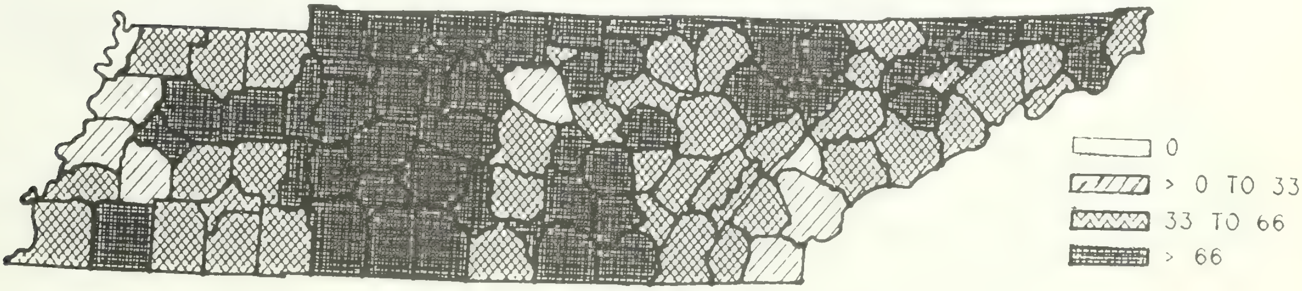

Figure 7.—*Percent timberland by county, Oak/Hickory forest type (see table 41), Tennessee, 1989.*

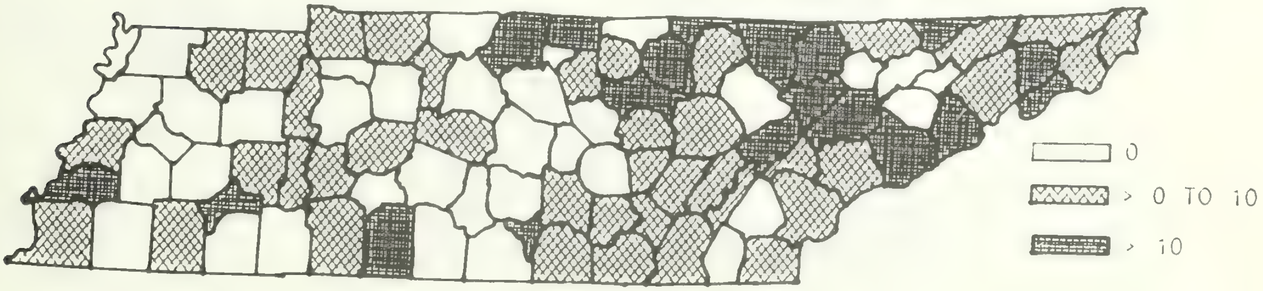

Figure 8.—*Percent timberland by county, Yellow-Poplar forest type (see table 41), Tennessee, 1989.*

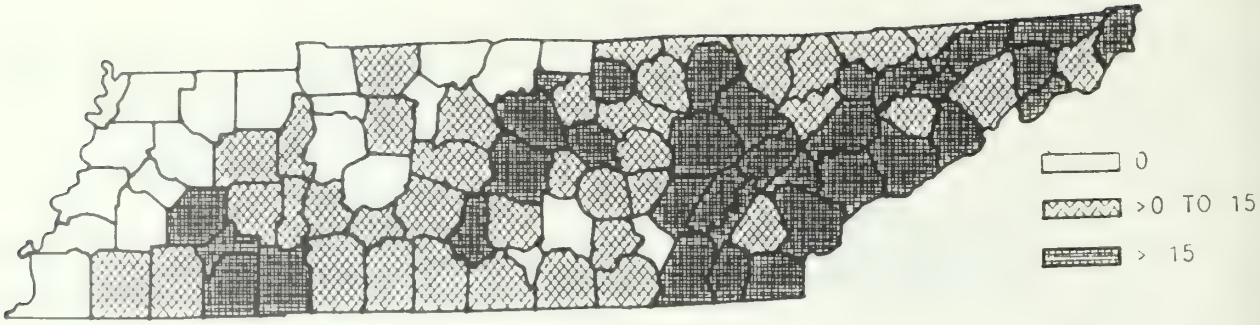

Figure 9.—*Percent timberland by county, Oak/Pine forest type (see table 41), Tennessee, 1989.*

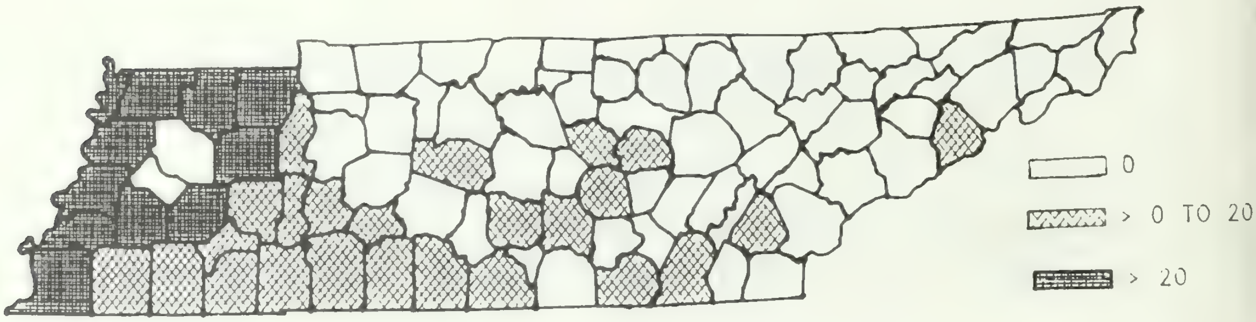

Figure 10.—*Percent timberland by county, Bottomland Hardwood forest type, a combination of Oak/Gum/Cypress and Elm/Ash/Cottonwood forest types (see table 41), Tennessee, 1989.*

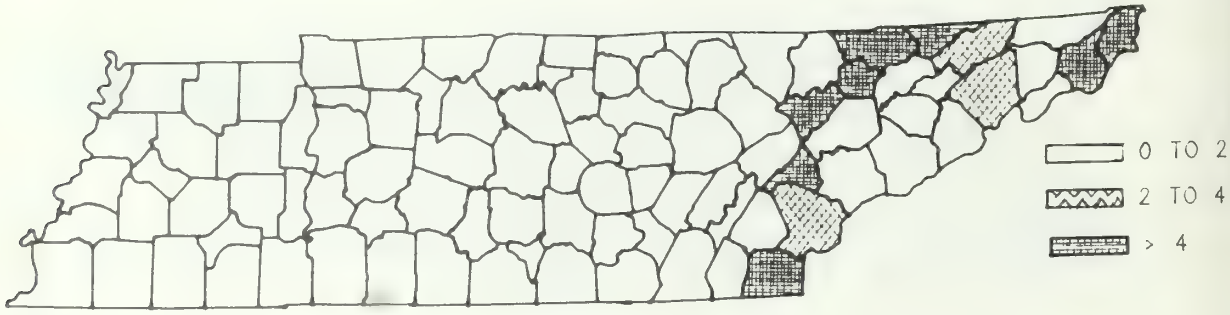

Figure 11.—*Percent timberland by county, Maple/Beech/Birch forest type (see table 41), Tennessee, 1989.*

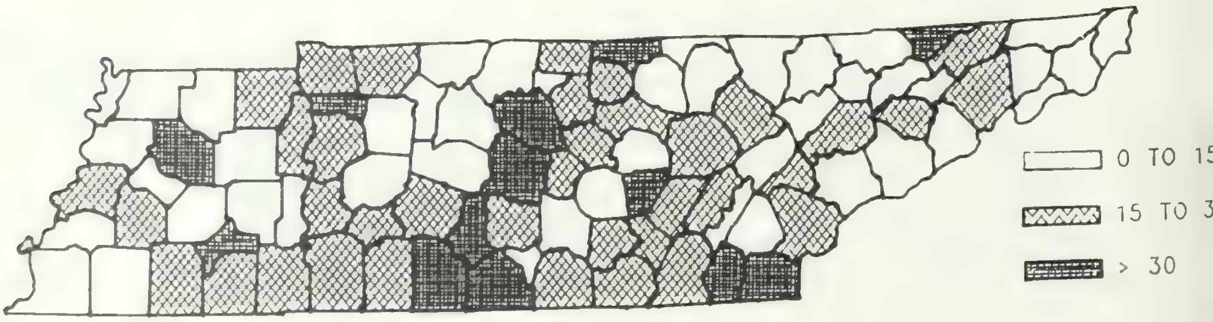

Figure 12.—*Percent timberland by county, sapling and seedling stand-size class, Tennessee, 1989.*

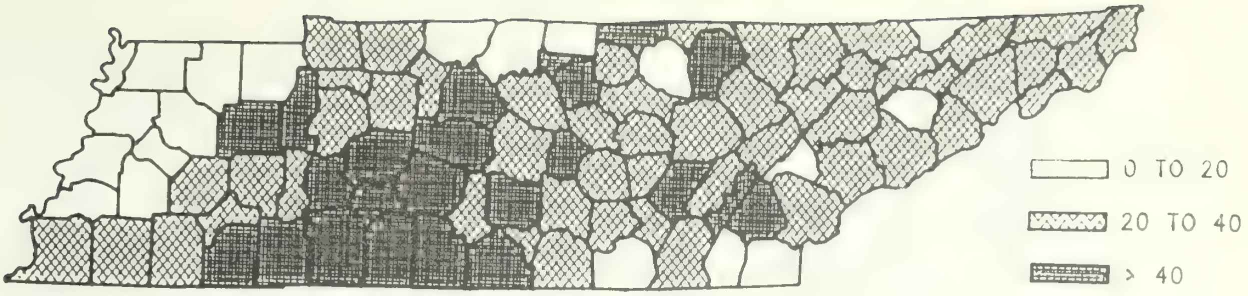

Figure 13.—*Percent timberland by county, poletimber stand-size class, Tennessee, 1989.*

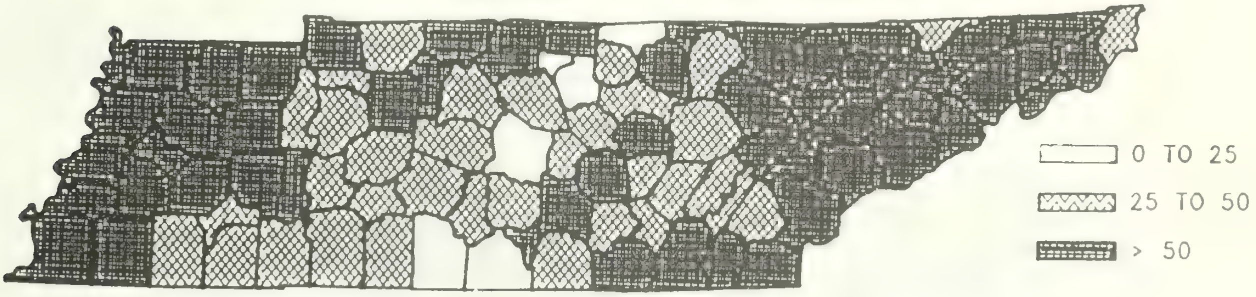

Figure 14.—*Percent timberland by county, sawtimber stand-size class, Tennessee, 1989.*

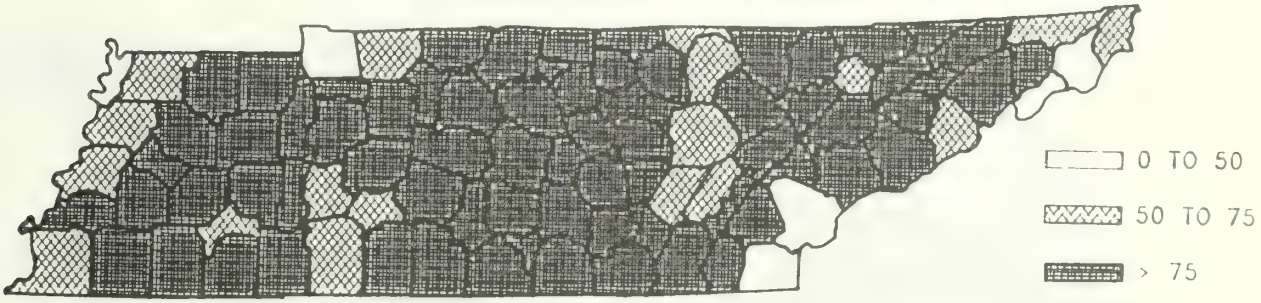

Figure 15.—*Percent timberland by county, nonindustrial private ownership class, Tennessee, 1989.*

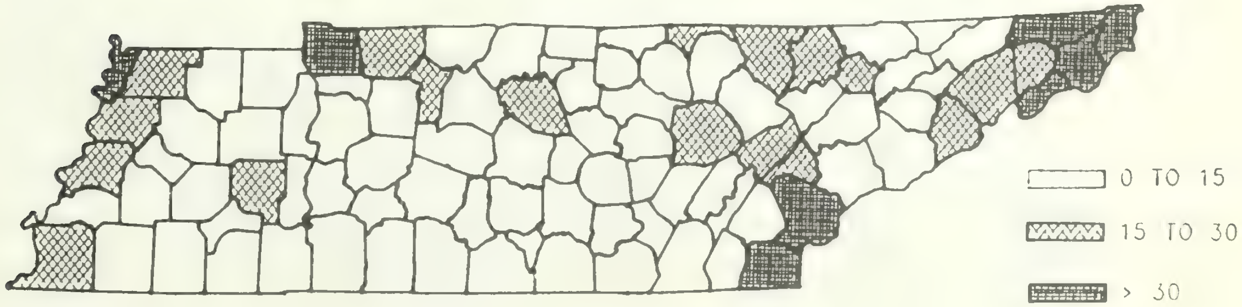

Figure 16.—*Percent timberland by county, public ownership class, Tennessee, 1989.*

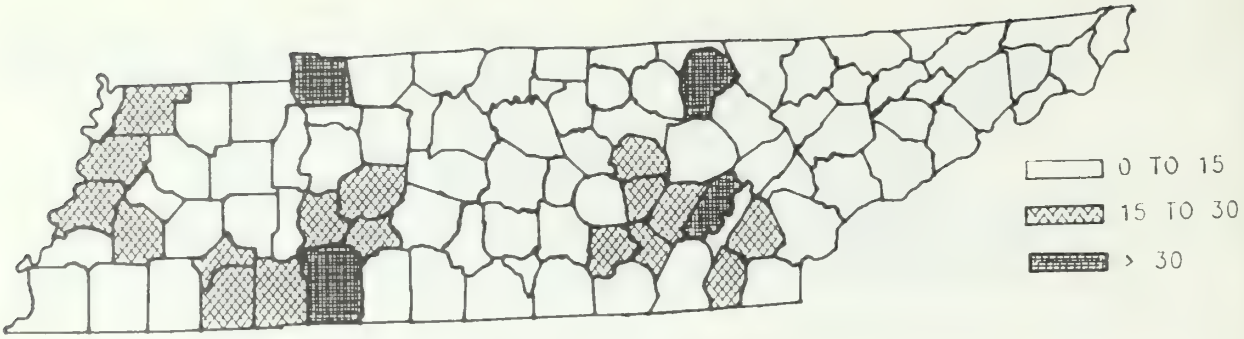

Figure 17.—*Percent timberland by county, forest industry ownership class, Tennessee, 1989.*

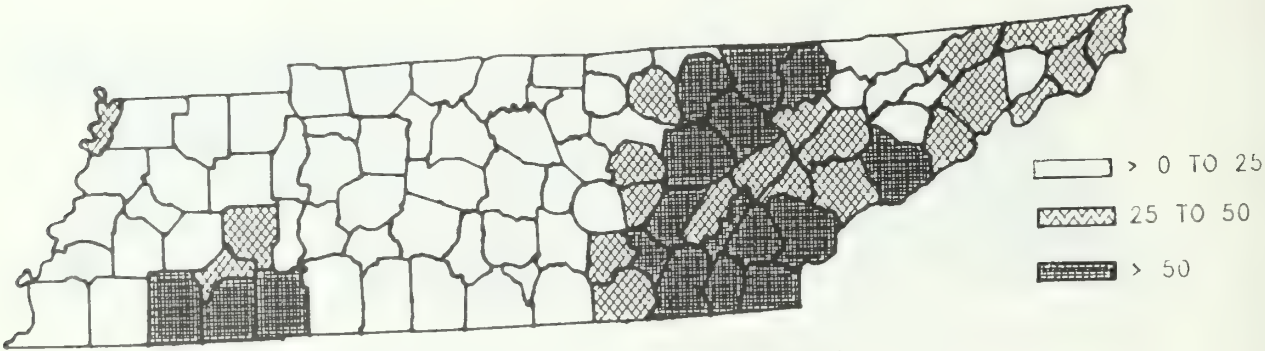

Figure 18.—*Softwood volume of growing stock by county, in million cubic feet, Tennessee, 1989.*

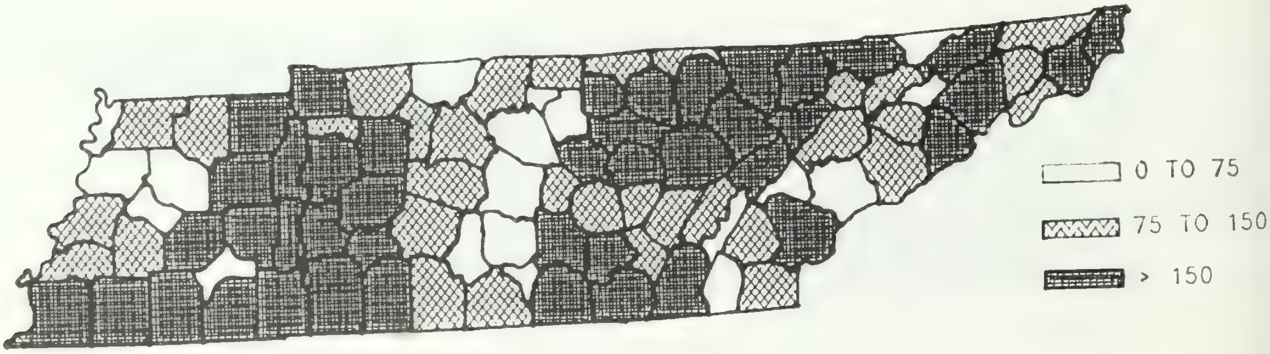

Figure 19.—*Hardwood volume of growing stock by county, in million cubic feet, Tennessee, 1989.*

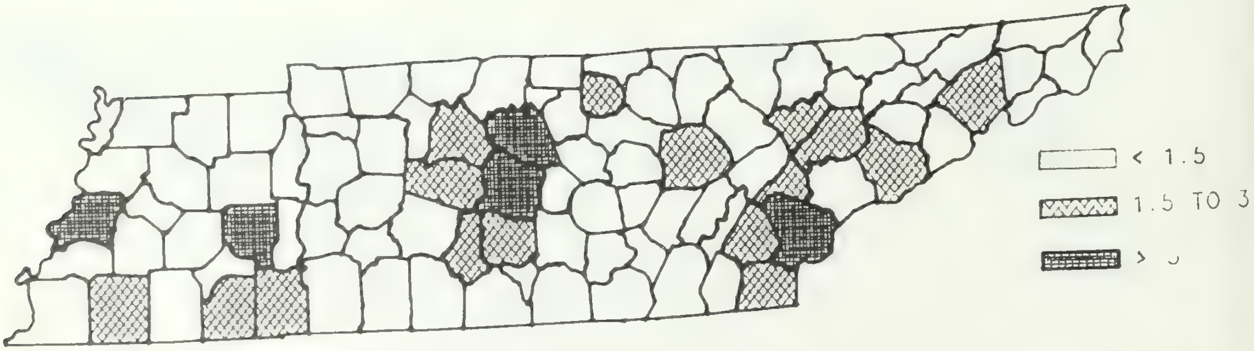

Figure 20.—*Softwood volume of rough and rotten trees by county, in million cubic feet, Tennessee, 1989.*

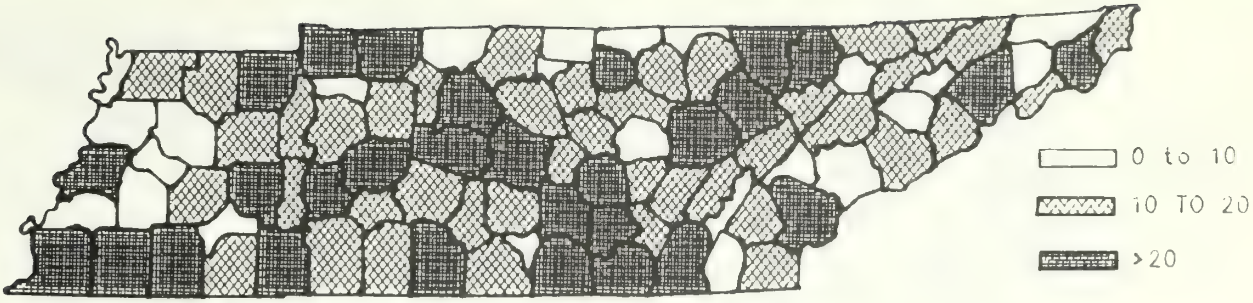

Figure 21.—*Hardwood volume of rough and rotten trees by county, in million cubic feet, Tennessee, 1989.*

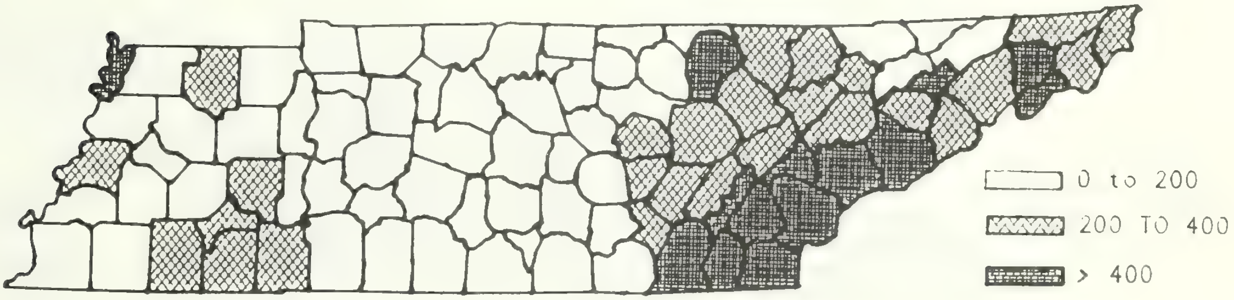

Figure 22.—*Average softwood volume of growing stock on timberland by county, in cubic feet per acre, Tennessee, 1989.*

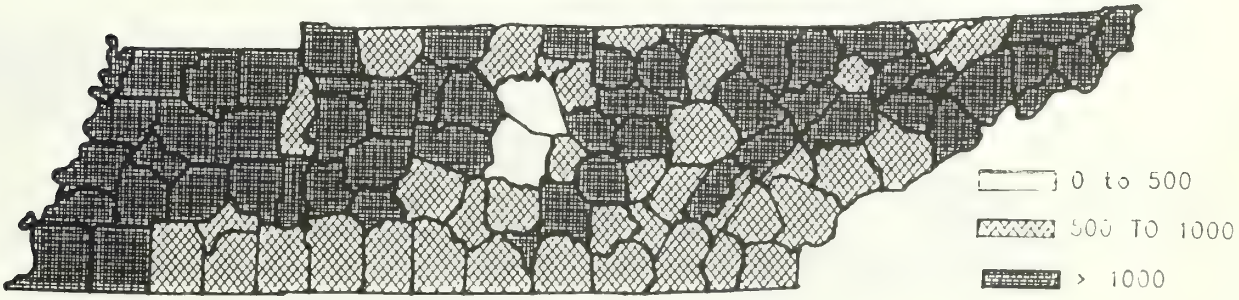

Figure 23.—*Average hardwood volume of growing stock on timberland by county, in cubic feet per acre, Tennessee, 1989.*

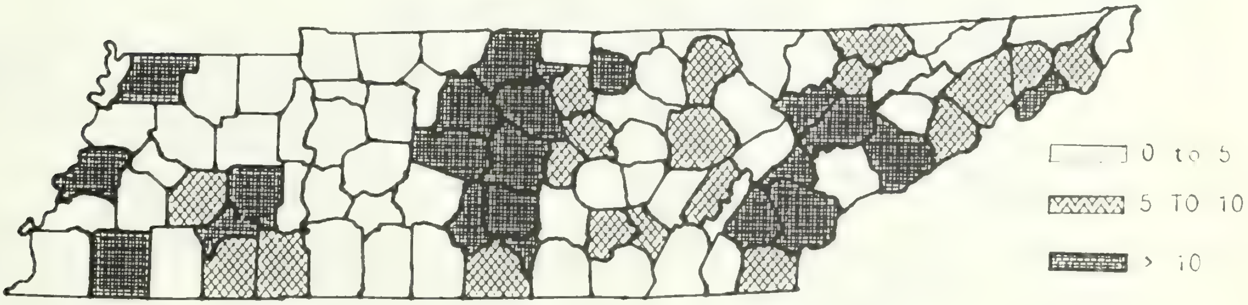

Figure 24.—*Average softwood volume of rough and rotten trees on timberland by county, in cubic feet per acre, Tennessee, 1989.*

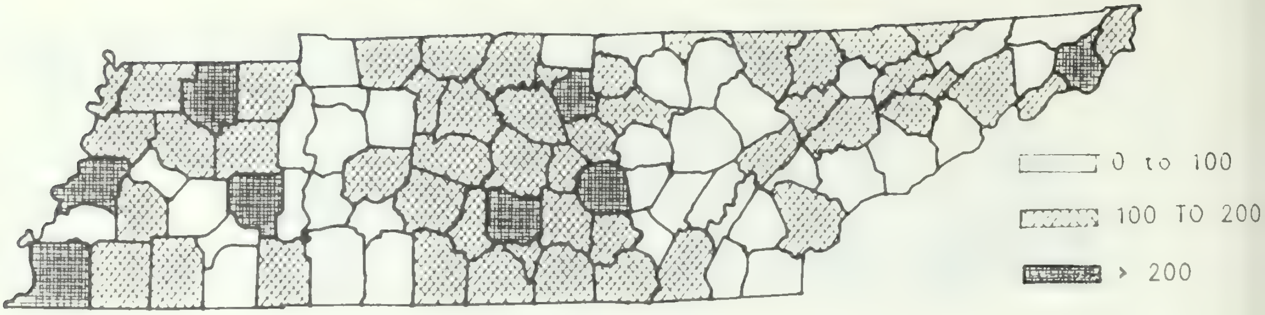

Figure 25.—*Average hardwood volume of rough and rotten trees on timberland by county, in cubic feet per acre, Tennessee, 1989.*

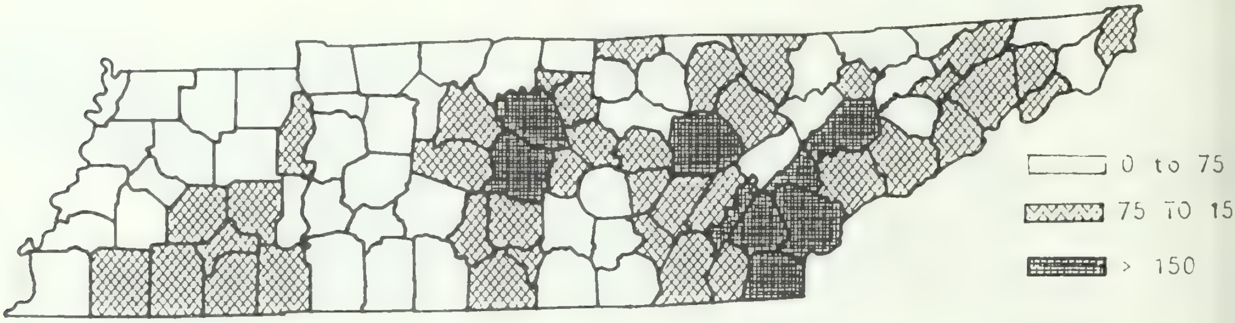

Figure 26.—*Average number of live softwood trees per acre on timberland by county, Tennessee, 1989.*

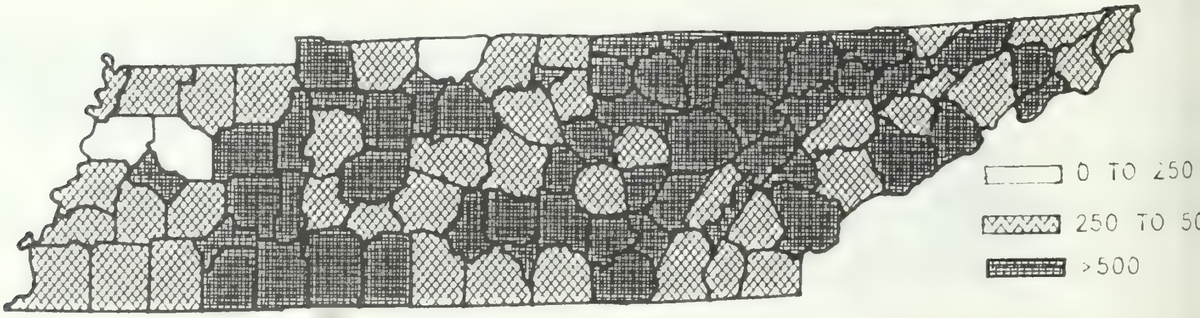

Figure 27.—*Average number of live hardwood trees per acre on timberland by county, Tennessee, 1989.*

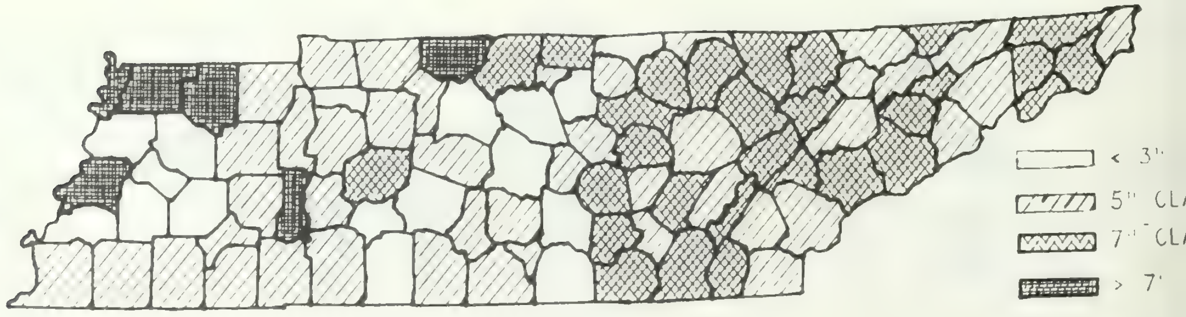

Figure 28.—*Average softwood DBH by county, quadratic mean diameter in inches, two inch diameter classes, Tennessee, 1989.*

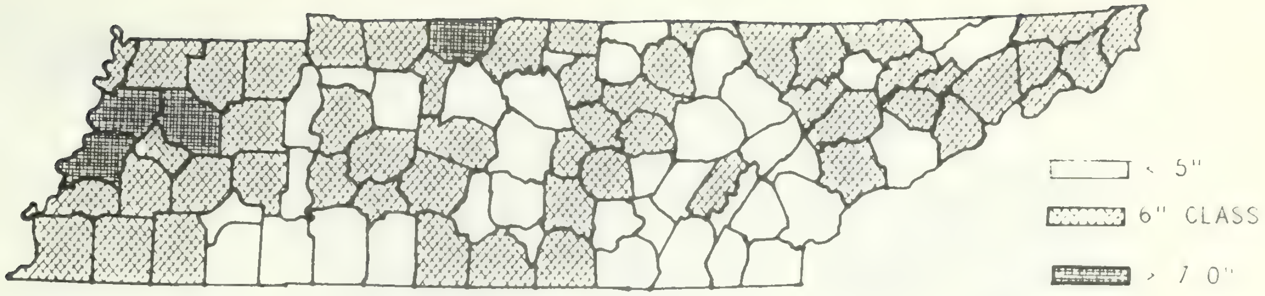

Figure 29.—*Average hardwood DBH by county, quadratic mean diameter in one inch diameter classes, Tennessee, 1989.*

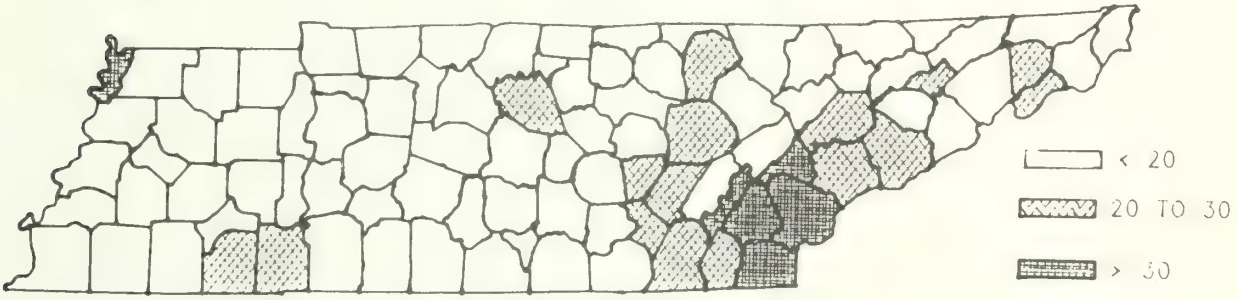

Figure 30.—*Average softwood basal area per acre on timberland by county, in square feet, Tennessee, 1989.*

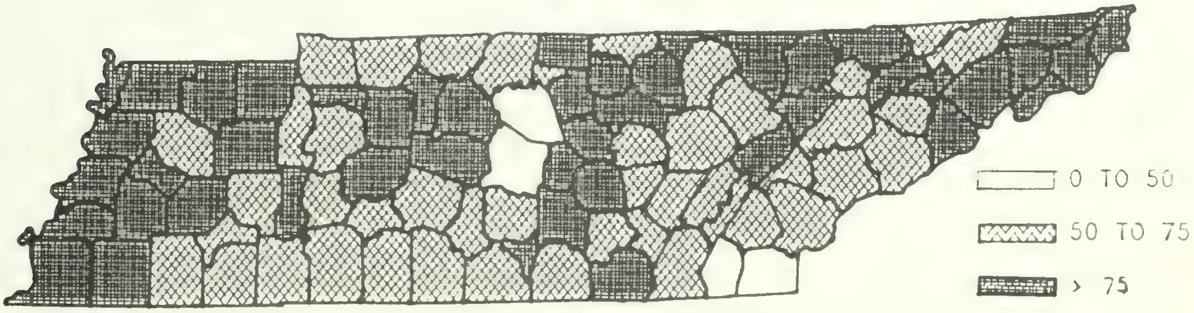

Figure 31.—*Average hardwood basal area per acre on timberland by county, in square feet, Tennessee, 1989.*

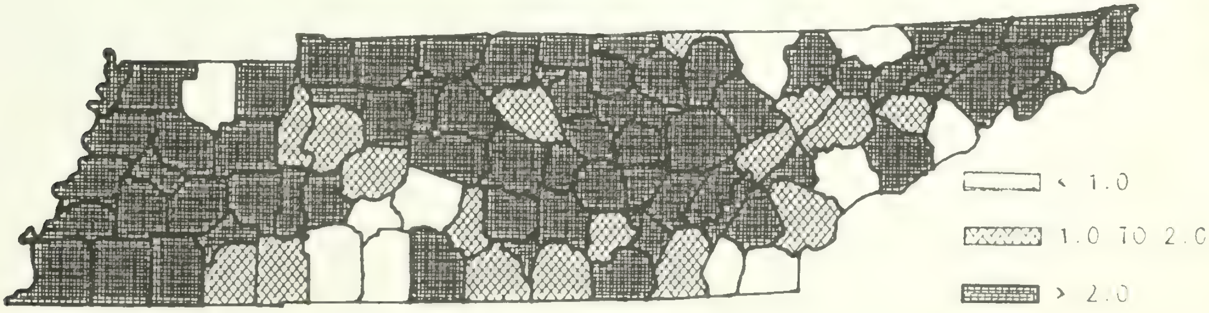

Figure 32.—*Ratio of average net annual growth to average net annual removals of growing stock for softwoods by county, Tennessee, 1989. A value greater than 1.0 indicates more growth than removals; a value less than 1.0 indicates more removals than growth.*

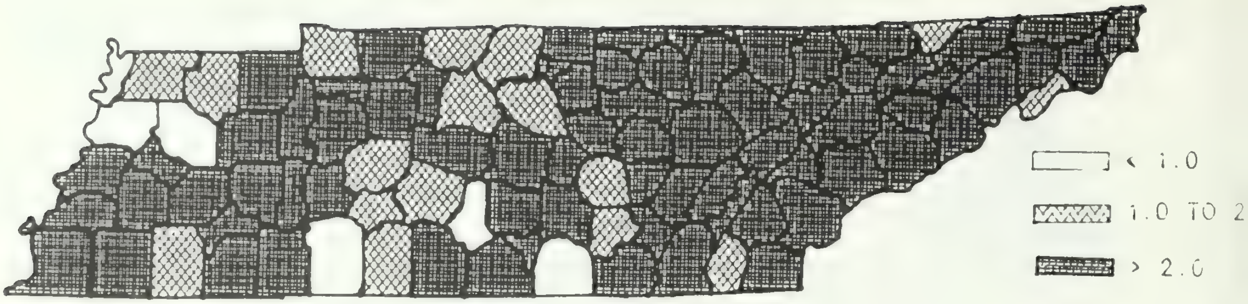

Figure 33.—*Ratio of average net annual growth to average net annual removals of growing stock for hardwoods by county, Tennessee, 1989. A value greater than 1.0 indicates more growth than removals; a value less than 1.0 indicates more removals than growth.*

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Tabulates forest resource information from a new inventory of the counties of Tennessee.

Additional Keywords: Area, volume, forest type, stand size, ownership.

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Forest Service

**Southern Forest
Experiment Station**

New Orleans,
Louisiana

Resource Bulletin
SO-149

Forest Statistics for North Alabama Counties — 1990

William H. McWilliams, K. L. Duncan, and John S. Vissage

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SUMMARY

The 1990 forest inventory of North Alabama revealed the following:

- Timberland area is 2,105.1 thousand acres, a decrease of 4 percent.
- The distribution of live-tree volume shows that the large increases that took place in all but the 6-inch class between 1972 and 1982 have abated. Past declines in the 6-inch class have continued for both hardwoods and softwoods.
- Live-tree volume totals 2,515.0 million cubic feet, about the same as in 1982.
- Hardwood sawtimber volume is 4,992.7 million board feet, an increase of 16 percent.
- Net growth is nearly double the removals of live hardwoods.
- Removals of live softwoods increased by 42 percent, and now represent nearly half of total removals.
- The growth-to-removals relationship is tight for live softwoods, with removals exceeding growth in six of the 10 counties.

FOREWORD

The USDA-Forest Service, Southern Forest Experiment Station, Forest Inventory and Analysis unit (SO-FIA), conducts forest inventories covering the States of Alabama, Arkansas, Louisiana, Mississippi, Oklahoma, Tennessee, Texas, and the island of Puerto Rico.

The SO-FIA forest inventories are part of a nationwide effort originally authorized by the McSweeney-McNary Act of 1928. More recent legislation pertinent to the SO-FIA mission includes the Forest and Rangeland Renewable Resources Planning Act of 1974 and the Forest and Rangeland Renewable Resources Research Act of 1978. The SO-FIA mission is to develop, analyze, and maintain forest resource information that is essential for formulation of forest policies and programs.

ACKNOWLEDGMENTS

The SO-FIA gratefully acknowledges the cooperation and excellent assistance provided by the Alabama Forestry Commission and Champion International in collecting field data. Appreciation is also expressed for the cooperation of other public agencies and private landowners in providing access to measurement plots.

The following members of the SO-FIA field staff completed the field measurements:

Jeffery Allen
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February 1990

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[1] Core tables are presented in response to the Southern Industrial Forestry Research Council's recommendations. These tables are identical among Forest Inventory and Analysis units in the eastern United States.

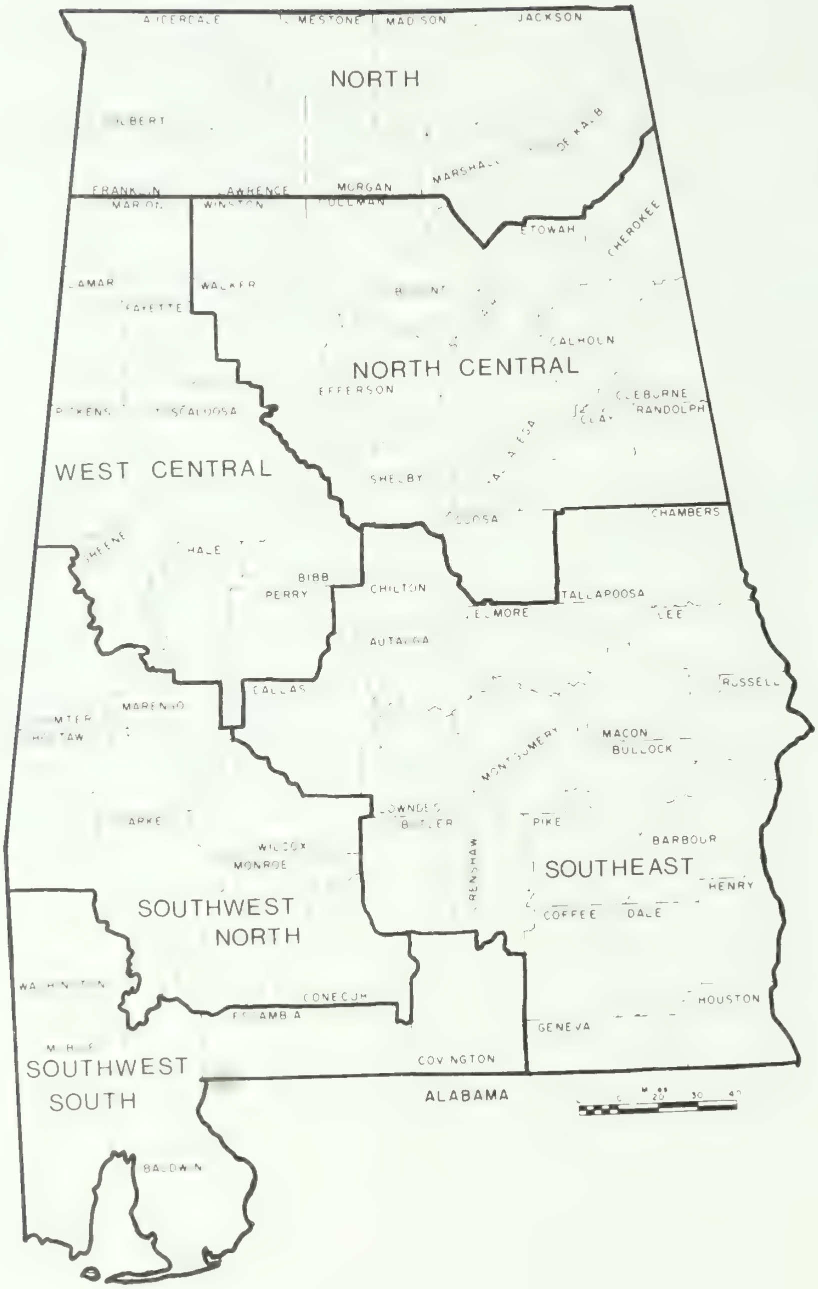

Figure I.—*Forest survey regions in Alabama.*

Forest Statistics for North Alabama Counties — 1990

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INTRODUCTION

Tabulated results were derived from data obtained during a recent forest inventory of North Alabama (fig. I). Core tables (1 to 25) are compatible among Forest Inventory and Analysis units in the Eastern U.S. Other tables (26 to 43) supplement the information contained in the core tables. Comparisons are made between results of the 1990 inventory and a previous inventory conducted in 1982.

METHODS

The SO-FIA uses a two-phase sample of temporary aerial-photo points and a systematic grid of permanent ground plots. The area of forested land was determined by photointerpretation of temporary points and field checks of permanent plots. Field measurements were conducted on a subset of permanent plots spaced 3 miles apart. Tree data were collected on measurement plots that were forested at the time of the current inventory, or were forested at the time of the previous inventory.

Each measurement plot consisted of 10 satellite points spread over an acre of forest. At each point, trees 5.0 inches in diameter at breast height and larger were selected for measurement on a variable-radius plot defined by a 37.5 BAF prism. Trees from 1.0 to 4.9 inches in diameter were tallied on 1/275 acre fixed plots at the first three points and at any remaining points where no trees 5.0 inches in diameter or larger were tallied. If no trees greater that 1.0 inch were tallied at a point, then seedlings were tallied. Several plot-level measurements relating to timber and non-timber assessment were also collected.

Tree data were used to estimate volumes, basal area, number of trees, and other per-acre variables. Ownership information was obtained for each measurement plot using tax records and other sources. Per acre estimates were expanded using county-level factors derived as part of the forest area determination. Thus, estimates at the county level may not match exactly with known totals for a particular variable.

In order to achieve greater compatibility among Forest Inventory and Analysis units, a modified tree classification system has been in effect since the 1988 inventory of Arkansas. Tree grade 5 is used to designate trees capable of producing at least one 12-foot log or two 8-foot logs in the saw-log portion, but not capable of producing a gradable 12-foot log in the butt 16-foot section. These trees - formerly classed as rough or rotten - are now included in growing stock. Any comparisons with previous estimates of growing stock are based on data that has been reprocessed to account for the change in definition. Because of the revised definition, and to better assess changes in whole-forest conditions; analysis of trends in inventory volume, growth, removals, and mortality will focus on live trees.

SAMPLING ERROR

The sampling methods were designed to achieve suitable sampling errors for estimates of area and volume at the State level. Sampling error increases as the area or volume considered decreases. The sampling errors presented in table I, equal to one standard deviation for the sample data,

Table I—*Sampling errors*[1] *for timberland, live trees, growing stock, and sawtimber, North Alabama Counties, 1990*

County	Timberland	Live-trees			Growing stock			Sawtimber volume
		Volume	Growth	Removals	Volume	Growth	Removals	
	Percent							
Colbert	1.2	9.8	16.9	38.9	10.1	20.8	39.0	15.2
De Kalb	2.2	11.5	18.1	29.2	12.0	16.2	28.9	18.0
Franklin	2.3	10.9	14.0	29.8	11.0	13.5	29.9	15.4
Jackson	1.4	6.2	10.0	48.9	6.6	12.6	48.2	9.8
Lauderdale	2.2	11.8	20.1	42.8	12.0	17.9	45.4	16.0
Lawrence	2.1	9.3	14.6	46.1	9.7	15.2	46.7	13.9
Limestone	2.1	12.5	27.8	(2)	13.0	29.5	49.5	16.1
Madison	2.3	10.9	21.8	(2)	12.1	19.3	(2)	17.3
Marshall	2.4	12.1	15.2	48.9	12.7	14.3	48.8	19.1
Morgan	2.0	8.7	18.6	37.7	9.2	16.5	37.7	13.2
All counties	0.6	3.4	5.4	13.6	3.6	5.5	13.6	5.1

[1] By random-sampling formula.

[2] Sampling error greater than 50.

may be used to compute confidence intervals for population estimates. For example, at the 95 percent confidence level, the confidence interval for live-tree volume (in million cubic feet) is:

$$2{,}515.0 \pm 1.96(0.034 \times 2{,}515.0) = 2{,}515.0 \pm 167.6$$

where 1.96 is the number of standard deviations. This confidence interval indicates a 95-percent degree of confidence that the range, 2,347.4 to 2,682.6 million cubic feet, will contain the true live-tree inventory volume.

The results are reported for individual counties so that users may combine counties as desired. It is not recommended that individual county data be used in isolation. The user should combine data for as many counties as possible. Sampling error for a combination of counties may be estimated using the following formula:

$$SE_g = \frac{SE_t \sqrt{X_t}}{\sqrt{X_g}}$$

where:

SE = standard error of estimate (expressed as a percent)
X = variable of interest (area or volume)
g = group of counties to be combined
t = total for the unit.

For example, the estimate of sampling error for live-tree volume in De Kalb, Jackson, Limestone, Madison, Marshall, and Morgan counties is 4.2 percent. The 95 percent confidence interval for live-tree volume is 1,631.9 ± 134.3 million cubic feet.

RESULTS

Area

The North Alabama survey region encompasses 10 northern-tier counties that neighbor the Tennessee River. The terrain is diverse, including parts of the East Gulf Coastal Plain, Highland Rim, and Cumberland Plateau physiographic sections. Forests cover 2.1 million acres or 48 percent of the land area. Nearly all of the forest area is classified as timberland capable of producing industrial wood products. The area of timberland decreased by 4 percent due to competing land uses, which includes the reclassification of 13,720 acres as reserved timberland. This acreage was added to the Sipsey National Wilderness located in the Bankhead National Forest. Overall, the timberland base has been stable through time; remaining between 2.1 and 2.2 million acres since the SO-FIA inventory process was initiated in the 1930's.

Ninety-one percent of the timberland is privately owned. Nonindustrial private owners, comprised mainly of farmers and miscellaneous individuals, control 85 percent of the timberland. Nonindustrial private timberland decreased slightly, due to a decrease in farmer-owned timberland. Forest industry owns a minor 6 percent of the timberland. Public timberland is 9 percent of the region total. Most of the public timberland is located in State-owned parks and a portion of the Bankhead National Forest in Lawrence county.

Oak-hickory is the predominate forest type, with two-thirds of the timberland area. Oak-hickory stands are most prevalent north of the Tennessee River. The oak-hickory forest type increased by 6 percent since 1982 and now totals 1.4 million acres. The remaining timberland consists primarily of loblolly-shortleaf and oak-pine stands. Oak-gum-cypress forests occupy 5 percent of the timberland, occurring on sites along the rivers and creeks that form the Tennessee River watershed.

Inventory

The volume of live trees did not change significantly, totaling 2.5 billion cubic feet. The volume of live trees includes the merchantable sound-wood volume of growing-stock trees, rough trees, and rotten trees. The growing-stock component of live-tree volume - the volume of trees with good management potential - increased by 4 percent. A 4 percent decrease in the volume of softwood growing stock was offset by an 8 percent increase in hardwood growing stock. Rough and rotten trees are 9 percent of the live tree volume.

The volume of live trees is dominated by hardwoods. Hardwood volume is three-fourths of the total, or 1.9 billion cubic feet. Red oak, white oak, and hickory are the most abundant species, with 65 percent of the hardwood volume. Sweetgum and yellow-poplar volumes are also significant.

Shifts in the distribution of live-tree volume by diameter class indicate that the hardwood resource has matured over the past eight years. With the exception of the 10-inch class, volumes either decreased or remained level in the 6- through 14-inch diameter classes. Volume increased in the 16-inch and larger classes. This pattern is quite different from the shifts that occurred between 1972 and 1982, when large increases in volume were apparent in the 10-inch and larger classes. The more recent changes were accompanied by a 16 percent increase in hardwood sawtimber volume.

Softwoods represent one-fourth of the live-tree volume. Loblolly pine contributes roughly half of the softwood volume. Virginia pine has the second highest percentage (24 percent), followed by shortleaf pine (14 percent), redcedar (8 percent), and other miscellaneous species (2 percent). The distribution of live-tree volume by diameter showed little change across most diameter classes. This contrasts large increases in volume that took place in the mid-range diameter classes between 1972 and 1982.

Components of Change

Changes in the inventory of live trees depend on three components: gross growth, mortality, and removals. Annual estimates of change are based on the period from the year of the previous inventory through the year prior to the present

Table II – *Components of annual change in the volume of live trees by inventory period and species group, North Alabama Counties, 1990*

Inventory period	Gross growth		
and species group	Net growth	Mortality	Removals
	Million cubic feet		
1972 to 1981:			
Softwoods	28.6	6.7	20.0
Hardwoods	58.1	17.0	34.3
Total	86.7	23.7	54.2
1982 to 1989:			
Softwoods	31.2	10.1	28.3
Hardwoods	63.1	21.7	32.4
Total	94.3	31.8	60.7

inventory. Gross growth of live trees was 126.1 million cubic feet for the period prior to 1990, an increase of 14 percent (table II). Increases were apparent for both softwoods and hardwoods. Net growth, which equals gross growth minus mortality, increased by 9 percent. The lower percentage increase for net growth resulted from an increase in mortality.

Removals of live trees increased by 12 percent. The overall increase was due to expansion of softwood removals. Hardwood removals remained level for the period. Softwood removals are approaching the volume of hardwood removals. From 1972 to 1981, softwood removals averaged 37 percent of total removals. Softwood removals averaged 47 percent of the total from 1982 to 1989.

The ratio of growth-to-removals is one measure of a forest's capacity to expand in volume. A ratio greater than 1.0:1.0 usually indicates increases in volume. For the current inventory period, the growth-to-removals ratio was 1.6:1.0; remaining constant since the previous inventory period. For hardwoods, the ratio increased from 1.7:1.0 to 1.9:1.0. The softwood ratio decreased from 1.4:1.0 to 1.1:1.0. Six of the 10 counties had softwood ratios less than 1.0:1.0.

CONCLUSIONS

The outlook for forest-related resources continues to show promise in North Alabama; however, the resource was far less dynamic between 1982 and 1990 than it was between 1972 and 1982. During the previous inventory period, live-tree volume increased sharply across all but the 6-inch diameter class. The 1990 inventory has shown no significant change in live-tree volume. This has occurred with little change in the structure of the timberland base, indicating a maturing of the region's forest. Increased removals have tightened the margin between growth and removals for softwoods. The margin for hardwoods has improved due to increased growth concurrent with decreased removals.

DEFINITION OF TERMS

Average net annual growth. – Average net annual volume increase for the inventory period.

Average annual mortality. – Average annual sound-wood volume of trees dying from natural causes.

Average annual removals. – Average net annual volume of trees removed from the inventory by harvesting, cultural operations (such as timber-stand improvement), land clearing, or changes in land use.

Commercial species. – Tree species which normally develop into trees suitable for industrial wood products.

Forest land. – Land at least 16.7 percent stocked by forest trees of any size, or formerly having such tree cover, and not currently developed for nonforest use.

Forest type. – A classification of forest land based upon the species forming a plurality of live-tree stocking.

Growing-stock trees. – Live trees of commercial species. Rough and rotten trees are excluded.

Growing-stock volume. – The cubic-foot volume of sound wood in growing-stock trees at least 5.0 inches in diameter at breast height, from a 1-foot stump to a minimum 4.0-inch top diameter outside bark of the central stem, or to the point where the central stem breaks into limbs.

Live trees. – Commercial and noncommercial tree species of sapling size or larger.

Live-tree volume. – The cubic-foot volume of sound wood in live trees at least 5.0 inches in diameter at breast height, from a 1-foot stump to a minimum 4.0-inch top diameter outside bark of the central stem, or to the point where the central stem breaks into limbs.

Natural stands. – Stands with no evidence of artificial regeneration. This includes those established by seed tree regeneration methods.

Noncommercial species. – Tree species of typically small size, poor form, or inferior quality which normally do not develop into trees suitable for industrial wood products.

Planted stands. – Stands with evidence of planting or direct seeding.

Poletimber trees.—Live trees at least 5.0 inches in diameter at breast height, but smaller than sawtimber size.

Reserved timberland.—Productive public forest land withdrawn from timber utilization through statute or administrative regulations.

Rotten trees.—Live trees of commercial species that do not contain at least one 12-foot log or two 8-foot logs in the saw-log portion, now or prospectively, primarily because of rot.

Rough trees.—Live trees of commercial species that do not contain at least one 12-foot log or two 8-foot logs in the saw-log portion, now or prospectively, primarily because of roughness or poor form. Also included are all live trees of noncommercial species.

Saplings.—Live trees at least 1.0 inches but less than 5.0 inches in diameter at breast height.

Sawtimber trees.—Live trees that contain at least one 12-foot log or two 8-foot logs in the saw-log portion, and meet regional specifications for freedom from defect. Softwoods must be at least 9.0 inches in diameter at breast height and hardwoods at least 11.0 inches in diameter at breast height.

Sawtimber volume.—Sound-wood volume of the saw-log portion of growing-stock sawtimber trees in board feet, International 1/4-inch rule and in cubic feet.

Seedlings.—Live trees less than 1.0 inch in diameter at breast height and greater than one foot tall for hardwoods, greater than six inches tall for softwoods, and greater than one-half inch in diameter at ground level for longleaf pine.

Select red oaks.—A classification of several red oak species composed of: cherrybark, Shumard, and northern red oaks.

Select white oaks.—A classification of several white oak species composed of: white, swamp chestnut, swamp white, chinkapin, Durand, and bur oaks.

Site class.—A classification of forest land in terms of inherent capacity to grow crops of industrial wood.

Stand-size class.—A classification of forest land based on the diameter class of live trees on the sampled area; that is, sawtimber, poletimber, or sapling and seedling.

Timberland.—Forest land that is producing, or is capable of producing, crops of industrial wood and not withdrawn from timber utilization. Timberland is synonymous with "commercial forest land" in prior reports.

Tree grade.—A classification of the volume of the saw-log portion of sawtimber trees, based on: 1) the log grade of the butt log, or 2) ability to produce at least one 12-foot or two 8-foot logs in the upper-section of the saw-log portion.

Woodland.—Forest land incapable of yielding crops of industrial wood because of adverse site conditions.

CORE TABLES 1-25

Table 1—*Area by county and land class, North Alabama Counties, 1990*

County	All land[1]	Forest land: Total	Timberland[2]	Woodland[3]	Reserved timberland	Nonforest land
	Thousand acres					
Colbert	377.0	209.2	209.2	...	...	167.8
De Kalb	498.4	221.2	221.2	...	...	277.2
Franklin	411.3	262.1	262.1	...	...	149.3
Jackson	684.6	430.4	430.4	...	...	254.1
Lauderdale	423.3	164.9	164.9	...	...	258.4
Lawrence	443.8	215.3	194.8	...	20.5	228.4
Limestone	357.7	90.0	90.0	...	...	267.7
Madison	515.6	187.3	187.3	...	...	328.4
Marshall	363.0	173.8	173.8	...	...	189.3
Morgan	368.2	171.4	171.4	...	...	196.8
All counties	4442.9	2125.6	2105.1	...	20.5	2317.3

[1] From U.S. Bureau of the Census.

[2] Forest land (formerly termed commercial forest land) that is producing or capable of producing at least 20 cubic feet of industrial wood per acre per year. Includes areas which may be inaccessible or inoperable by current standards. Excludes reserved timberland.

[3] Forest land incapable of producing 20 cubic feet of industrial wood per acre per year under natural conditions because of adverse site conditions.

Table 2—*Area of timberland by county and ownership class, North Alabama Counties, 1990*

County	All ownerships	National forest	Misc. federal	State	County and municipal	Forest industry[1]	Farmer	Corporate[2]	Individual[2]
	Thousand acres								
Colbert	209.2	...	...	10.7	...	10.7	48.3	37.6	101.9
De Kalb	221.2	...	6.0	6.0	...	6.0	101.6	6.0	95.7
Franklin	262.1	1.1	4.9	...	...	78.8	88.6	19.7	68.9
Jackson	430.4	...	27.6	5.5	...	16.6	121.4	71.7	187.6
Lauderdale	164.9	...	...	...	...	13.2	98.9	...	52.8
Lawrence	194.8	72.9	10.6	...	...	...	84.8	10.6	15.9
Limestone	90.0	...	10.0	...	...	...	60.0	10.0	10.0
Madison	187.3	...	8.5	8.5	...	...	59.6	17.0	93.6
Marshall	173.8	...	5.6	5.6	...	...	78.5	5.6	78.5
Morgan	171.4	...	15.1	...	...	...	110.9	5.0	40.3
All counties	2105.1	74.0	88.3	36.3	...	125.2	852.7	183.2	745.3

[1] Includes land leased to forest industry.

[2] Indian land will be classed as corporate or individual as defined by the Bureau of Indian Affairs.

Table 3—*Area of timberland by county and forest type group, North Alabama Counties, 1990*

County	Total	Forest type group					
		White-red-jack pine	Loblolly-shortleaf pine		Oak-pine	Oak-hickory	Oak-gum-cypress
			Planted	Natural			
	Thousand acres						
Colbert	209.2	...	10.7	26.8	21.5	144.9	5.4
De Kalb	221.2	...	12.0	41.9	29.9	137.5	...
Franklin	262.1	...	39.4	15.9	39.4	162.5	4.9
Jackson	430.4	...	5.5	33.1	44.1	336.6	11.0
Lauderdale	164.9	...	19.8	...	13.2	131.9	...
Lawrence	194.8	5.2	5.3	42.0	10.5	110.6	21.2
Limestone	90.0	...	...	...	5.0	65.0	20.0
Madison	187.3	...	...	34.0	...	127.7	25.5
Marshall	173.8	...	11.2	39.2	28.0	95.3	...
Morgan	171.4	...	5.0	25.2	20.2	100.8	20.2
All counties	2105.1	5.2	108.9	258.2	211.8	1412.7	108.2

Table 4—*Area of timberland by county and stand-size class, North Alabama Counties, 1990*

County	All classes	Stand-size class		
		Sawtimber	Poletimber	Sapling-seedling
	Thousand acres			
Colbert	209.2	69.7	91.2	48.3
De Kalb	221.2	65.8	77.7	77.7
Franklin	262.1	65.1	78.8	118.2
Jackson	430.4	182.1	160.0	88.3
Lauderdale	164.9	59.3	59.3	46.2
Lawrence	194.8	89.3	63.2	42.2
Limestone	90.0	60.0	10.0	20.0
Madison	187.3	110.7	68.1	8.5
Marshall	173.8	72.9	61.7	39.2
Morgan	171.4	80.7	70.6	20.2
All counties	2105.1	855.6	740.7	508.8

Table 5—*Area of timberland by county and site class, North Alabama Counties, 1990*

County	All classes	Site class (cubic feet/acre/year)				
		>165	120-165	85-120	50-85	<50
	Thousand acres					
Colbert	209.2	26.8	10.7	85.8	85.8	...
De Kalb	221.2	17.9	12.0	47.8	95.7	47.8
Franklin	262.1	14.8	6.1	49.2	172.3	19.7
Jackson	430.4	27.6	77.3	99.3	138.0	88.3
Lauderdale	164.9	...	26.4	46.2	72.5	19.8
Lawrence	194.8	...	21.1	42.2	105.3	26.2
Limestone	90.0	10.0	25.0	20.0	35.0	...
Madison	187.3	25.5	25.5	34.0	59.6	42.6
Marshall	173.8	16.8	50.4	56.1	28.0	22.4
Morgan	171.4	40.3	15.1	60.5	45.4	10.1
All counties	2105.1	179.8	269.6	541.2	837.6	276.9

Table 6—*Area of timberland by county and stocking classes of growing-stock trees, North Alabama Counties, 1990*

County	All classes	Stocking class (percent) > 130	100-130	60-100	16.7-60	< 16.7
	Thousand acres					
Colbert	209.2	...	32.2	166.3	10.7	...
De Kalb	221.2	...	59.8	131.5	29.9	...
Franklin	262.1	14.8	73.9	148.8	19.7	4.9
Jackson	430.4	...	38.6	320.1	66.2	5.5
Lauderdale	164.9	...	39.6	92.3	33.0	...
Lawrence	194.8	10.5	115.6	58.1	5.3	5.3
Limestone	90.0	...	15.0	50.0	20.0	5.0
Madison	187.3	...	51.1	102.1	34.0	...
Marshall	173.8	5.6	22.4	128.9	16.8	...
Morgan	171.4	10.1	45.4	95.8	20.2	...
All counties	2105.1	41.0	493.5	1294.0	255.8	20.7

Table 7—*Area of timberland by forest type and ownership class, North Alabama Counties, 1990*

Forest type[1]	All ownerships	National forest	Other public	Forest industry	Forest industry-leased	Other private
	Thousand acres					
White-red-jack pine	5.2	5.2	...	...	...	...
Loblolly-shortleaf pine	367.1	21.9	5.5	63.9	...	275.8
Softwood total	372.3	27.1	5.5	63.9	...	275.8
Oak-pine	211.8	5.2	16.7	...	...	189.8
Oak-hickory	1412.7	41.6	71.8	51.5	9.8	1238.0
Oak-gum-cypress	108.2	...	30.6	...	...	77.6
Hardwood total	1732.7	46.8	119.2	51.5	9.8	1505.4
All types	2105.1	74.0	124.7	115.4	9.8	1781.1

[1] Forest type is based on species plurality of all live trees. Mixed types that in combination contain a majority of hardwood stodking are hardwood types.

Table 8—*Area of timberland by ownership class and stocking classes of growing-stock trees, North Alabama Counties, 1990*

Ownership class	All classes	Stocking class (percent) > 130	100-130	60-100	16.7-60	< 16.7
	Thousand acres					
National forest	74.0	5.2	57.3	11.5	...	...
Other public	124.7	5.3	5.5	102.4	11.5	...
Forest industry	115.4	9.8	37.8	57.3	10.4	...
Forest industry-leased	9.8	...	...	9.8	...	...
Other private	1781.1	20.6	392.9	1113.0	233.9	20.7
All ownerships	2105.1	41.0	493.5	1294.0	255.8	20.7

Table 9 – Area of timberland by forest type and stand-size class, North Alabama Counties, 1990

Forest type[1]	All classes	Stand-size class		
		Sawtimber	Poletimber	Sapling-seedling
	Thousand acres			
White-red-jack pine	5.2	5.2	...	...
Loblolly-shortleaf pine	367.1	105.6	197.4	64.1
Softwood total	372.3	110.8	197.4	64.1
Oak-pine	211.8	75.1	75.9	60.8
Oak-hickory	1412.7	595.8	433.1	383.8
Oak-gum-cypress	108.2	73.9	34.3	...
Hardwood total	1732.7	744.8	543.2	444.6
All types	2105.1	855.6	740.7	508.8

[1] Forest type is based on species plurality of all live trees. Mixed types that in combination contain a majority of hardwood stocking are hardwood types.

Table 10 – Number of live trees on timberland by species and diameter class, North Alabama Counties, 1990

Species	All classes	Diameter class (inches at breast height)										
		1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Shortleaf-loblolly pine	99375	28416	24719	16570	14654	7497	4096	1748	869	435	158	205	9
Other yellow pines	66874	32692	12465	8899	6918	3326	1804	570	143	56	2	...	...
Eastern white-red pine	321	...	...	77	...	84	70	36	41	12	...	...	...
Eastern hemlock	1391	903	451	...	...	...	27	...	...	10	..	...	...
Cypress	515	...	...	163	77	...	88	188	...	...	...	...	...
Other softwoods	53258	30230	11792	5915	3291	1359	455	130	58	11	...	16	...
Total softwoods	221734	92241	49427	31624	24939	12266	6540	2671	1111	525	160	221	9
Select white oaks	85501	40326	19359	7512	5624	4409	3137	2004	1599	611	506	365	48
Select red oaks	13731	3251	3571	1551	1775	922	976	698	277	260	267	161	22
Other white oaks	71999	32151	18329	6115	5985	3515	2557	1261	969	446	279	340	52
Other red oaks	70198	34094	8165	8623	5573	5011	3167	2477	1316	837	364	460	112
Hickory	140097	84529	22276	12757	7757	5467	3717	1635	1007	571	209	166	7
Hard maple	44521	34444	5740	1885	1189	626	357	133	81	67	...	...	...
Soft maple	92600	74266	10813	3124	1866	1071	447	305	294	192	100	119	4
Beech	7649	5058	1938	265	51	31	...	39	53	34	40	114	27
Sweetgum	65660	32336	14219	6882	5477	3274	1822	839	394	232	111	74	...
Tupelo-blackgum	74973	59490	8065	3578	1163	1398	606	300	230	24	80	40	...
Ash	52884	34351	9342	4581	1668	1476	595	343	192	94	137	106	...
Basswood	2577	1996	...	112	104	136	66	115	...	31	9	6	...
Yellow-poplar	27959	16724	5037	1146	1053	1232	884	683	475	314	183	206	22
Black walnut	2803	514	1286	411	216	231	53	25	46	11	8	...	...
Other hardwoods	274273	191903	60827	11765	4644	2321	1275	668	415	215	157	78	4
Total hardwoods	1027422	645433	188966	70307	44144	31118	19657	11526	7348	3940	2450	2236	297
Noncommercial	129623	89643	31445	6526	1382	493	85	33	16	...	...	...	...
All species	1378778	827316	269839	108456	70464	43878	26282	14230	8475	4464	2610	2457	306

able 11 — *Number of growing-stock trees on timberland by species and diameter class, North Alabama Counties, 1990*

	Diameter class (inches at breast height)											
Species	All classes	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
ortleaf-loblolly pine	91095	25245	20957	15985	14230	7275	4039	1748	827	422	158	199	9
ther yellow pines	57324	26777	10877	7692	6803	2853	1669	502	107	43	2	...	...
astern white-red pine	281	...	...	77	...	44	70	36	41	12	...	...	...
astern hemlock	913	451	451	...	...	...	...	...	...	10	...	...	...
ypress	515	...	...	163	77	...	88	188	...	...	...	...	...
ther softwoods	40381	21981	8663	5399	2898	907	337	109	58	11	...	16	...
Total softwoods	190509	74455	40948	29316	24009	11079	6204	2582	1033	499	160	215	9
lect white oaks	57621	18440	16209	6690	4905	4226	2692	1819	1402	536	406	255	40
lect red oaks	10695	2471	2328	1207	1727	803	784	589	231	183	229	131	11
ther white oaks	54752	23011	13029	5104	5538	3307	2111	1006	805	358	242	225	17
ther red oaks	52663	21342	6210	6962	5445	4899	2850	2322	1168	761	267	378	59
ickory	88314	42429	16832	10278	7237	5064	3216	1494	934	510	179	138	3
ard maple	26589	17494	5234	1885	1003	544	205	116	81	28	...	...	...
oft maple	50737	37320	8802	2045	1150	710	226	214	127	24	70	51	...
eech	5383	3082	1938	147	51	...	...	22	53	22	21	35	13
weetgum	45943	18117	10771	5287	5364	3126	1686	821	364	222	111	74	...
upelo-blackgum	34105	23393	5060	2197	1053	1280	606	204	200	24	66	21	...
sh	28256	14434	6367	3519	1529	1258	480	285	162	94	60	68	...
asswood	1515	998	...	112	104	73	66	115	...	31	9	6	...
ellow-poplar	21700	12627	3155	1146	985	1159	834	662	453	290	163	206	19
lack walnut	1181	...	506	305	114	152	27	25	31	11	8	...	...
ther hardwoods	126095	78565	32795	7373	3560	1734	878	554	324	182	83	44	4
Total hardwoods	605551	313723	129236	54256	39765	28336	16663	10249	6334	3275	1915	1632	166
ll species	796060	388178	170184	83572	63774	39415	22867	12832	7367	3774	2076	1847	175

Table 12 — *Volume of growing stock on timberland by species and diameter class, North Alabama Counties, 1990*

	Diameter class (inches at breast height)										
Species	All classes	5.0-6.9	7.0-8.9	9.0 10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet										
Shortleaf-loblolly pine	412.8	38.6	88.9	84.6	74.3	45.4	29.1	21.6	10.5	18.9	0.9
Other yellow pines	141.2	21.2	42.0	32.6	27.4	12.4	4.0	1.5	0.1	...	...
Eastern white-red pine	3.8	0.3	...	0.3	1.0	0.7	1.1	0.4	...	...	...
Eastern hemlock	0.4	...	...	...	...	...	...	0.4	...	...	...
Cypress	7.7	0.5	0.7	...	1.6	5.0	...	...	...	...	...
Other softwoods	43.4	11.8	14.1	8.4	4.2	2.0	1.7	0.5	...	0.6	...
Total softwoods	609.3	72.4	145.7	125.9	108.5	65.5	35.9	24.4	10.6	19.5	0.9
Select white oaks	278.8	14.8	27.5	42.7	43.7	41.8	45.3	20.7	19.7	17.7	4.9
Select red oaks	85.7	2.7	9.8	8.4	13.0	12.7	7.6	8.1	12.6	9.6	1.2
Other white oaks	191.3	12.0	31.7	31.3	32.7	21.1	23.4	12.2	11.8	13.7	1.6
Other red oaks	301.6	17.0	29.5	49.7	45.4	51.6	34.1	29.3	13.4	24.6	6.9
Hickory	278.4	22.5	36.7	50.3	54.8	36.9	32.0	22.6	11.1	10.9	0.6
Hard maple	25.2	4.4	5.5	5.6	3.4	2.5	2.1	1.7	...	...	...
Soft maple	33.8	4.5	5.8	6.0	3.5	4.0	3.2	0.8	3.2	2.9	...
Beech	7.6	0.5	0.3	...	...	0.4	1.5	0.9	1.0	2.4	0.6
Sweetgum	157.4	9.3	29.9	31.8	28.9	20.4	13.2	10.8	7.2	6.0	...
Tupelo-blackgum	45.1	4.6	4.7	12.1	8.7	3.9	6.1	0.9	3.2	0.9	...
Ash	56.8	8.2	8.0	13.0	6.5	6.3	4.4	3.2	2.7	4.5	...
Basswood	7.9	0.2	0.6	0.8	1.1	2.9	...	1.2	0.7	0.6	...
Yellow-poplar	113.9	3.1	4.7	13.1	15.8	18.2	15.4	14.1	9.1	17.0	3.5
Black walnut	4.6	0.4	0.4	1.0	0.2	0.5	0.7	0.6	0.8	...	...
Other hardwoods	98.7	16.5	17.8	15.1	13.2	12.0	9.1	7.6	4.0	2.9	0.6
Total hardwoods	1686.8	120.6	212.9	280.9	270.8	235.2	197.9	134.5	100.4	113.6	19.9
All species	2296.1	193.0	358.6	406.8	379.3	300.7	233.8	158.9	111.0	133.0	20.9

Table 13 – *Volume of growing stock in the saw-log portion of sawtimber*[1] by trees on timberland by *species and diameter class, North Alabama Counties, 1990*

Species	Diameter class (inches at breast height)								
	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet								
Shortleaf-loblolly pine	243.4	66.6	65.2	39.7	26.3	19.3	9.0	16.5	0.8
Other yellow pines	61.7	24.8	22.4	10.0	3.3	1.1	0.1	...	...
Eastern white-red pine	3.2	0.3	0.8	0.7	1.0	0.4	...	...	...
Eastern hemlock	0.3	...	...	...	...	0.3	...	...	...
Cypress	6.0	...	1.4	4.6	...	...	...	...	...
Other softwoods	14.6	6.7	3.7	1.7	1.6	0.4	...	0.5	...
Total softwoods	329.2	98.3	93.5	56.6	32.2	21.6	9.1	17.0	0.8
Select white oaks	155.0	...	31.8	33.7	36.4	17.4	16.5	15.0	4.0
Select red oaks	52.8	...	9.3	10.2	6.3	7.2	10.5	8.2	1.2
Other white oaks	91.4	...	23.7	16.5	19.1	10.1	9.7	11.1	1.2
Other red oaks	163.3	...	31.8	41.6	28.3	24.6	10.8	19.8	6.5
Hickory	132.4	...	40.0	29.0	26.3	18.1	9.4	9.3	0.4
Hard maple	7.6	...	2.6	2.1	1.7	1.3	...	...	...
Soft maple	13.4	...	2.4	3.1	2.5	0.6	2.6	2.3	...
Beech	5.2	...	...	0.2	1.2	0.8	0.7	1.8	0.4
Sweetgum	67.3	...	19.5	15.7	11.3	9.4	6.3	5.2	...
Tupelo-blackgum	18.7	...	6.2	3.1	5.2	0.8	2.7	0.8	...
Ash	21.9	...	4.6	5.2	3.5	2.7	2.2	3.8	...
Basswood	4.8	...	0.7	2.3	...	0.7	0.6	0.5	...
Yellow-poplar	77.0	...	10.6	15.0	13.4	12.3	7.6	15.1	3.0
Black walnut	2.3	...	0.2	0.3	0.6	0.5	0.7	...	...
Other hardwoods	39.1	...	9.4	9.8	7.6	6.4	3.0	2.3	0.6
Total hardwoods	852.3	...	192.6	187.8	163.4	112.9	83.2	95.1	17.3
All species	1181.5	98.3	286.2	244.4	195.6	134.4	92.4	112.1	18.1

[1] That part of the bole of sawtimber trees between a 1-foot stump and saw-log top.

Table 14 – *Volume of sawtimber on timberland by species and diameter class, North Alabama Counties, 1990*

Species	Diameter class (inches at breast height)								
	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Shortleaf-loblolly pine	1416.6	355.8	370.4	232.5	160.3	121.3	60.1	111.9	4.3
Other yellow pines	341.4	130.5	124.5	57.8	20.9	7.2	0.6	...	...
Eastern white-red pine	16.0	1.3	4.1	3.3	5.1	2.1	...	...	...
Eastern hemlock	2.0	...	...	...	...	2.0	...	...	...
Cypress	31.1	...	7.6	23.6	...	...	...	...	...
Other softwoods	75.1	34.0	18.9	8.3	8.4	2.8	...	2.7	...
Total softwoods	1882.3	521.5	525.4	325.5	194.6	135.5	60.8	114.7	4.3
Select white oaks	910.1	...	171.6	190.2	220.0	105.9	101.5	95.3	25.5
Select red oaks	310.8	...	50.3	56.0	36.2	43.3	67.9	50.2	6.9
Other white oaks	534.9	...	128.7	91.9	113.8	60.3	62.0	70.5	7.6
Other red oaks	933.6	...	166.7	230.6	167.8	146.7	65.5	122.2	34.2
Hickory	798.0	...	223.6	170.7	161.6	116.6	62.4	60.3	2.8
Hard maple	45.6	...	14.1	12.1	10.4	9.0	...	...	...
Soft maple	75.8	...	12.8	16.9	13.5	2.6	15.4	14.5	...
Beech	31.9	...	...	1.3	7.3	4.5	4.8	12.0	2.1
Sweetgum	388.6	...	104.5	87.2	66.2	58.8	39.6	32.4	...
Tupelo-blackgum	104.7	...	33.0	16.9	29.6	4.8	16.7	3.7	...
Ash	130.2	...	24.6	29.4	20.3	15.9	13.8	26.3	...
Basswood	29.1	...	3.5	13.8	...	4.4	3.9	3.5	...
Yellow-poplar	458.2	...	59.5	89.4	75.9	74.3	47.2	95.4	16.5
Black walnut	15.1	...	0.7	1.6	3.8	3.0	6.0	...	...
Other hardwoods	226.0	...	50.8	54.6	44.6	38.9	19.2	15.3	2.7
Total hardwoods	4992.7	...	1044.5	1062.5	971.0	689.0	525.8	601.6	98.3
All species	6875.0	521.5	1569.9	1388.0	1165.6	824.4	586.6	716.2	102.6

Table 15 – *Volume of growing stock and sawtimber on timberland by county and species group, North Alabama Counties, 1990*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Colbert	159.2	7.5	43.0	0.9	22.9	84.9	362.9	3.9	101.8	2.9	46.9	207.4
De Kalb	210.1	14.3	77.8	...	33.2	84.8	563.3	47.0	223.3	...	78.5	214.5
Franklin	249.9	30.9	34.2	1.9	48.4	134.4	662.3	41.5	102.1	4.5	136.8	377.6
Jackson	438.3	1.6	36.9	19.8	72.6	307.5	1351.7	...	122.5	31.6	216.7	980.9
Lauderdale	164.8	24.4	7.7	...	26.3	106.4	502.5	63.4	20.6	...	70.8	347.6
Lawrence	228.6	11.6	46.8	9.5	41.1	119.5	656.7	27.9	164.8	21.0	107.1	335.9
Limestone	123.9	...	10.7	...	39.4	73.8	456.5	...	57.9	...	138.3	260.3
Madison	257.1	...	71.9	13.9	66.4	104.9	831.3	...	296.5	41.4	194.9	298.5
Marshall	201.3	9.1	61.2	4.4	32.7	94.0	644.1	8.8	246.8	1.4	99.6	287.4
Morgan	262.8	16.5	51.6	1.2	56.2	137.4	843.8	67.7	177.4	5.5	173.2	420.0
All counties	2296.1	115.9	441.9	51.5	439.1	1247.7	6875.0	260.1	1513.9	108.3	1262.8	3729.9

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 16 – *Volume of timber on timberland by class of timber and species group, North Alabama Counties, 1990*

		Softwood			Hardwood	
		Pine				
Class of timber	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet					
Sawtimber trees:						
Saw-log portion	1181.5	47.5	260.7	20.9	217.0	635.3
Upper-stem portion	282.0	9.7	48.8	3.4	55.3	164.8
Total	1463.6	57.2	309.5	24.4	272.3	800.1
Poletimber trees	832.5	58.7	132.4	27.1	166.8	447.5
All growing-stock trees	2296.1	115.9	441.9	51.5	439.1	1247.7
Rough trees:						
Sawtimber size	88.8	0.7	10.1	2.5	22.9	52.6
Poletimber size	79.4	0.8	3.5	2.2	20.3	52.7
Total	168.2	1.5	13.6	4.6	43.2	105.3
Rotten trees:						
Sawtimber size	47.3	...	0.2	0.7	8.7	37.8
Poletimber size	3.4	...	...	0.2	1.1	2.0
Total	50.7	...	0.2	0.9	9.8	39.8
Salvable dead trees:						
Sawtimber size	3.2	...	0.9	0.8	0.4	1.1
Poletimber size	3.7	...	1.3	...	...	2.4
Total	6.9	...	2.2	0.8	0.4	3.5
All classes	2521.9	117.4	457.9	57.9	492.5	1396.2

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 17 – *Volume of live trees and growing stock on timberland by ownership class and species group, North Alabama Counties, 1990*

	Live trees						Growing stock					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet											
National forest	110.5	5.0	32.7	3.4	7.3	62.1	106.3	4.7	31.6	3.4	7.0	59.7
Other public	196.6	1.6	22.4	3.9	52.7	116.0	176.6	1.6	21.9	3.1	47.0	102.9
Forest industry	105.1	40.7	9.7	1.5	14.7	38.5	97.0	40.7	8.5	1.5	13.6	32.7
Forest industry-leased	10.1	...	...	0.5	3.6	6.0	8.7	...	...	0.5	3.3	4.9
Other private	2092.7	70.2	391.0	47.8	413.7	1170.2	1907.5	69.0	379.9	43.0	368.2	1047.5
All ownerships	2515.0	117.4	455.7	57.0	492.1	1392.7	2296.1	115.9	441.9	51.5	439.1	1247.7

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 18 – *Average net annual growth of growing stock and sawtimber on timberland by county and species group, North Alabama Counties, 1990*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Colbert	8.1	1.4	2.2	0.1	0.9	3.4	24.4	0.2	9.0	0.4	4.7	10.0
De Kalb	10.4	0.4	1.6	...	2.3	6.1	29.0	2.6	8.9	...	6.3	11.2
Franklin	13.5	3.4	0.7	0.2	3.1	6.0	36.8	2.8	11.0	0.4	7.3	15.2
Jackson	12.7	0.2	1.4	0.4	3.2	7.5	33.3	...	5.8	0.4	6.7	20.4
Lauderdale	9.0	1.2	1.6	...	0.9	5.2	29.4	2.8	6.5	...	3.0	17.2
Lawrence	9.1	1.4	1.0	0.4	2.1	4.3	25.6	4.0	5.6	0.9	2.9	12.1
Limestone	3.0	...	0.2	...	1.4	1.4	14.3	...	0.5	...	8.6	5.1
Madison	10.4	1.3	3.7	0.3	2.0	3.1	34.3	2.6	18.8	0.4	7.2	5.3
Marshall	7.9	0.6	2.3	0.3	1.1	3.5	29.3	1.6	11.4	0.9	6.8	8.7
Morgan	10.9	1.0	3.3	...	1.4	5.1	41.9	6.8	13.0	0.2	4.5	17.4
All counties	94.9	11.0	18.1	1.7	18.5	45.7	298.3	23.4	90.4	3.6	58.1	122.7

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 19 – *Average net annual removals of growing stock and sawtimber on timberland by county and species group, North Alabama Counties, 1990*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Colbert	3.6	...	0.7	...	0.2	2.7	11.7	...	3.2	...	...	8.5
De Kalb	12.1	3.7	2.2	...	1.5	4.6	40.6	12.6	5.7	...	6.2	16.2
Franklin	8.5	...	5.1	...	0.4	3.1	28.8	...	17.7	...	1.6	9.5
Jackson	5.5	...	1.0	...	2.1	2.3	22.7	...	5.3	...	8.0	9.3
Lauderdale	6.0	...	2.6	...	0.1	3.2	22.1	...	13.3	...	...	8.8
Lawrence	6.2	...	3.7	0.1	0.6	1.8	21.1	...	17.2	...	1.4	2.6
Limestone	4.4	...	1.6	...	0.6	2.2	22.0	...	9.5	...	3.2	9.4
Madison	0.3	...	...	...	...	0.2	0.1	...	...	0.1	...	...
Marshall	6.1	...	3.5	0.1	0.3	2.2	24.1	...	15.3	0.5	0.8	7.5
Morgan	5.0	...	2.8	...	0.7	1.5	20.6	...	11.7	...	2.9	6.1
All counties	57.7	3.7	23.3	0.2	6.5	24.0	213.9	12.6	98.9	0.6	24.0	77.8

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 20 – *Average net annual growth and average annual removals of growing stock on timberland by species, North Alabama Counties, 1990*

Species	Growth	Removals
	Million cubic feet	
Yellow pines	28.6	27.0
Eastern white-red pines	0.4	...
Other softwoods	1.7	0.2
Total softwoods	30.7	27.3
Select white-red oaks	15.5	7.3
Other white-red oaks	16.8	11.3
Hickory	8.2	5.0
Hard maple	1.0	0.1
Sweetgum	5.7	1.7
Ash-walnut-black cherry	4.3	0.1
Yellow-poplar	4.7	1.8
Other hardwoods	7.9	3.2
Total hardwoods	64.2	30.4
All species	94.9	57.7

Table 21—*Average net annual growth and average annual removals of sawtimber on timberland by species, North Alabama Counties, 1990*

Species	Growth	Removals
	------ *Million board feet* -----	
Yellow pines	112.0	111.5
Eastern white-red pines	1.9	...
Other softwoods	3.6	0.6
Total softwoods	117.5	112.1
Select white-red oaks	54.8	25.6
Other white-red oaks	42.3	36.8
Hickory	17.5	14.9
Hard maple	0.4	...
Sweetgum	22.3	5.5
Ash-walnut-black cherry	8.5	...
Yellow-poplar	21.9	6.6
Other hardwoods	13.2	12.3
Total hardwoods	180.8	101.8
All species	298.3	213.9

Table 22—*Average annual mortality of growing stock and sawtimber on timberland by species, North Alabama Counties, 1990*

Species	Growing stock	Sawtimber
	---- *Million cubic feet* ----	*Million board feet* ----
Yellow pines	8.3	15.3
Other softwoods	0.5	1.8
Total softwoods	8.8	17.0
Select white-red oaks	1.4	3.7
Other white-red oaks	5.4	15.9
Hickory	2.9	7.1
Sweetgum	1.3	2.2
Ash-walnut-black cherry	0.3	1.4
Yellow-poplar	1.3	3.5
Other hardwoods	2.4	5.9
Total hardwoods	15.0	39.6
All species	23.9	56.7

Table 23—*Average net annual growth and average annual removals of growing stock on timberland by ownership class and species group, North Alabama Counties, 1990*

	Growth						Removals					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
						Million cubic feet						
National forest	3.9	0.8	0.2	0.1	0.6	2.3	1.9	...	0.7	...	0.4	0.8
Other public	5.0	0.1	1.0	0.3	1.2	2.6	0.3	...	0.2	...	0.2	...
Forest industry	8.0	4.2	1.3	...	0.9	1.6	5.9	2.2	1.9	...	0.1	1.7
Forest industry-leased	0.7	...	...	...	0.3	0.5	...	...	...	...	...	...
Other private	77.1	5.9	15.6	1.3	15.5	38.8	49.6	1.5	20.6	0.2	5.8	21.4
All ownerships	94.9	11.0	18.1	1.7	18.5	45.7	57.7	3.7	23.3	0.2	6.5	24.0

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 24 – *Average net annual growth and average annual removals of sawtimber on timberland by ownership class and species group, North Alabama Counties, 1990*

	Growth						Removals					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million board feet											
National forest	12.3	2.1	1.4	...	1.1	7.6	4.7	...	3.3	...	0.9	0.5
Other public	17.9	...	9.1	...	2.1	6.7	0.8	...	0.8	...	...	...
Forest industry	12.5	6.7	4.9	0.1	-0.1	0.9	20.3	9.1	5.9	...	0.6	4.8
Forest industry-leased	1.6	...	...	0.4	1.1	0.1	...	...	...	...	...	...
Other private	254.1	14.6	75.1	3.1	53.9	107.4	188.1	3.5	89.0	0.6	22.4	72.5
All ownerships	298.3	23.4	90.4	3.6	58.1	122.7	213.9	12.6	98.9	0.6	24.0	77.8

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 25 – *Volume of sawtimber on timberland by species and tree grade, North Alabama Counties, 1990*

Species	All grades	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
	Million board feet					
Yellow pines	1758.0	468.9	230.9	1028.3	...	29.9
Cypress	31.1	31.1	...	...	...	...
Redcedar	75.1	74.5	...	...	...	0.7
Other softwoods	18.0	2.0	...	16.0	...	...
Total softwoods	1882.3	576.5	230.9	1044.3	...	30.6
Select white-red oaks	1220.9	96.2	320.6	556.8	181.5	65.8
Other white-red oaks	1468.5	75.5	276.9	731.2	315.6	69.3
Hickory	798.0	28.6	155.8	461.6	121.7	30.2
Hard maple	45.6	...	5.6	23.9	13.6	2.5
Sweetgum	388.6	8.9	65.7	269.1	31.9	13.1
Tupelo and blackgum	104.7	12.0	12.4	66.7	7.5	6.2
Ash-walnut-black cherry	173.7	20.2	47.3	68.1	23.2	14.8
Yellow-poplar	458.2	52.2	83.8	168.6	119.9	33.7
Other hardwoods	334.4	12.3	48.3	154.7	83.8	35.2
Total hardwoods	4992.7	305.9	1016.4	2500.6	898.8	271.0
All species	6875.0	882.4	1247.2	3544.9	898.8	301.6

Table 26 – *Area of timberland by stand age, forest type group and type of regeneration, North Alabama Counties, 1990*

Stand age class	Pine		Oak-pine		Other hardwood types	
	Artificial	Natural	Artificial	Natural	Artificial	Natural
	Thousand acres					
1-10	10.9	5.6	...	...	10.0	32.8
11-20	34.6	11.5	...	...	...	17.3
21-30	30.1	24.6	...	...	...	13.9
31-40	5.6	10.4	...	...	...	10.7
41-50	4.9	...	...	...	...	...
>50	...	...	...	...	...	5.3
Mixed	28.0	206.0	6.6	205.2	12.0	1419.0
Total	114.1	258.2	6.6	205.2	21.9	1499.0

Table 27 – *Volume of softwood growing stock on timberland by forest type, North Alabama Counties, 1990*

County	Total	Forest type group					
		White-red-jack pine	Loblolly-shortleaf pine		Oak-pine	Oak-hickory	Oak-gum-cypress
			Planted	Natural			
	Million cubic feet						
Colbert	51.3	...	7.5	24.4	8.6	10.3	0.5
De Kalb	92.2	...	12.2	43.8	16.7	19.4	...
Franklin	67.0	...	30.9	9.7	12.3	13.9	0.3
Jackson	58.3	...	1.6	20.9	20.3	15.6	...
Lauderdale	32.1	...	18.5	...	6.3	7.4	...
Lawrence	67.9	4.7	7.0	32.2	8.4	14.6	1.1
Limestone	10.7	...	...	...	7.5	3.2	...
Madison	85.9	...	...	58.5	...	16.2	11.2
Marshall	74.7	...	9.1	30.8	28.6	6.2	...
Morgan	69.3	...	16.4	29.7	13.1	9.7	0.4
All counties	609.3	4.7	103.1	249.9	121.8	116.4	13.5

Table 28 – *Volume of hardwood growing stock on timberland by forest type, North Alabama Counties, 1990*

County	Total	Forest type group					
		White-red-jack pine	Loblolly-shortleaf pine		Oak-pine	Oak-hickory	Oak-gum-cypress
			Planted	Natural			
	Million cubic feet						
Colbert	107.9	...	0.2	2.8	7.3	89.1	8.5
De Kalb	118.0	...	0.2	6.1	13.7	97.9	...
Franklin	182.9	...	9.5	4.0	17.6	146.8	5.0
Jackson	380.1	...	...	8.9	15.1	346.5	9.5
Lauderdale	132.7	...	3.3	...	4.3	125.1	...
Lawrence	160.6	1.2	0.1	10.8	5.4	111.9	31.2
Limestone	113.2	...	...	...	6.1	68.4	38.7
Madison	171.2	...	...	6.7	...	129.7	34.9
Marshall	126.7	...	...	8.9	27.6	90.1	...
Morgan	193.5	...	0.6	13.9	14.6	128.0	36.5
All counties	1686.8	1.2	13.8	62.2	111.7	1333.6	164.4

Table 29 – *Volume of softwood growing stock in the saw-log portion of sawtimber trees on timberland by forest type, North Alabama Counties, 1990*

County	Total	Forest type group					
		White-red-jack pine	Loblolly-shortleaf pine		Oak-pine	Oak-hickory	Oak-gum-cypress
			Planted	Natural			
	Million cubic feet						
Colbert	21.0	...	0.9	8.4	4.0	7.2	0.5
De Kalb	47.0	...	6.9	17.7	8.9	13.5	...
Franklin	25.9	...	7.6	4.8	5.4	8.1	...
Jackson	27.1	...	...	6.5	11.4	9.2	...
Lauderdale	15.9	...	7.1	...	4.8	4.0	...
Lawrence	39.7	3.2	2.5	18.2	4.8	10.1	1.0
Limestone	9.3	...	...	...	6.6	2.8	...
Madison	58.1	...	...	37.5	...	12.4	8.2
Marshall	41.7	...	1.8	17.0	21.0	2.0	...
Morgan	43.5	...	11.8	16.4	9.3	5.6	0.3
All counties	329.2	3.2	38.5	126.5	76.1	74.9	10.0

Table 30 – *Volume of hardwood growing stock in the saw-log portion of sawtimber trees on timberland by forest type, North Alabama Counties, 1990*

County	Total	Forest type group				
		Loblolly-shortleaf pine		Oak-pine	Oak-hickory	Oak-gum-cypress
		Planted	Natural			
Colbert	45.3	...	1.2	3.0	36.1	4.9
De Kalb	50.9	...	2.0	2.8	46.1	...
Franklin	86.3	4.0	2.4	10.5	67.7	1.8
Jackson	201.3	...	2.0	2.9	192.1	4.2
Lauderdale	72.3	1.6	...	0.4	70.3	...
Lawrence	77.6	...	3.9	1.5	58.1	14.1
Limestone	68.4	...	...	3.1	39.6	25.7
Madison	83.6	...	1.7	...	66.0	15.9
Marshall	67.1	...	4.8	14.5	47.8	...
Morgan	99.5	...	4.8	6.9	64.5	23.3
All counties	852.3	5.5	22.8	45.7	688.3	89.9

Table 31 – *Volume of timber on timberland by county, class of timber and species group, North Alabama Counties, 1990*

County	All classes	Growing stock		Rough		Rotten	
		Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
	Million cubic feet						
Colbert	185.8	51.3	107.9	2.5	19.2	...	5.0
De Kalb	232.0	92.2	118.0	6.0	12.9	0.2	2.7
Franklin	269.5	67.0	182.9	1.4	14.5	...	3.7
Jackson	486.8	58.3	380.1	2.3	33.6	0.1	12.4
Lauderdale	184.2	32.1	132.7	0.7	14.9	...	3.8
Lawrence	243.6	67.9	160.6	2.5	11.2	...	1.4
Limestone	138.2	10.7	113.2	0.3	10.9	...	3.1
Madison	279.5	85.9	171.2	1.5	11.3	...	9.6
Marshall	220.4	74.7	126.7	1.0	11.2	0.8	6.1
Morgan	275.0	69.3	193.5	1.7	8.7	0.1	1.8
All counties	2515.0	609.3	1686.8	19.8	148.5	1.1	49.6

Table 32 – *Number of live trees on timberland by detailed species and diameter class, North Alabama Counties, 1990*

Species	Diameter class (inches at breast height)												
	All classes	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Shortleaf pine	19518	7415	3917	2037	2768	1731	1036	482	84	27	20	...	...
Loblolly pine	79857	21001	20802	14533	11885	5766	3059	1266	785	408	138	205	9
Virginia pine	66874	32692	12465	8899	6918	3326	1804	570	143	56	2	...	...
E. white pine	321	...	...	77	...	84	70	36	41	12	...	...	...
Redcedar	53258	30230	11792	5915	3291	1359	455	130	58	11	...	16	...
Hemlock-spruce	1391	903	451	...	...	...	27	...	...	10	...	...	...
Cypress	515	...	...	163	77	...	88	188	...	...	...	...	...
Total softwoods	221734	92241	49427	31624	24939	12266	6540	2671	1111	525	160	221	9
Select white oaks	85501	40326	19359	7512	5624	4409	3137	2004	1599	611	506	365	48
Select red oaks	13731	3251	3571	1551	1775	922	976	698	277	260	267	161	22
Other white oaks	71999	32151	18329	6115	5985	3515	2557	1261	969	446	279	340	52
Other red oaks	70198	34094	8165	8623	5573	5011	3167	2477	1316	837	364	460	112
Other hickories	140097	84529	22276	12757	7757	5467	3717	1635	1007	571	209	166	7
Persimmon	14293	9405	2602	1474	529	203	53	17	...	10	...	...	...
Hard maple	44521	34444	5740	1885	1189	626	357	133	81	67	...	...	...
Soft maple	91550	73760	10322	3124	1866	1031	447	305	282	192	100	119	4
Boxelder	1049	506	492	...	...	40	...	...	12	...	...	...	...
Beech	7649	5058	1938	265	51	31	...	39	53	34	40	114	27
Sweetgum	65660	32336	14219	6882	5477	3274	1822	839	394	232	111	74	...
Blackgum	74848	59490	8065	3578	1110	1398	583	279	217	24	80	25	...
Other gums/tupelos	125	...	...	...	53	...	23	21	13	...	...	15	...
White ash	42666	30064	6306	3244	1015	973	353	252	177	71	127	84	...
Other ashes	10218	4287	3036	1337	652	503	242	91	15	23	10	22	...
Sycamore	3429	1354	1476	202	122	105	102	...	15	20	20	13	...
Basswood	2577	1996	...	112	104	136	66	115	...	31	9	6	...
Yellow-poplar	27959	16724	5037	1146	1053	1232	884	683	475	314	183	206	22
Magnolia	2556	998	1012	232	178	...	28	62	29	...	9	8	...
Willow	1389	984	...	220	...	75	79	...	32	...	...	...	...
Black walnut	2803	514	1286	411	216	231	53	25	46	11	8	...	...
Black cherry	23745	15009	5708	2035	346	260	230	65	35	19	20	15	4
American elm	18437	14829	2023	916	253	168	124	39	30	32	18	5	...
Other elms	52442	39596	10287	814	1120	243	192	102	30	12	28	18	...
River birch	306	...	...	...	65	...	43	62	68	19	43	8	...
Other birches	594	506	...	...	53	36	...	...	...	...	...	...	...
Hackberry	17373	10319	4424	887	529	466	300	234	116	76	9	12	...
Black locust	7863	4120	2066	693	517	303	82	36	46	...	...	...	...
Other locusts	1095	...	780	263	51	...	...	...	...	...	...	...	...
Sassafras	29445	20721	7363	661	468	204	...	...	...	28	...	...	...
Dogwood	92443	67334	22594	2387	129	...	...	...	...	...	...	...	...
Holly	564	451	...	113	...	...	...	...	...	...	...	...	...
Other commercial	8296	6279	492	868	284	259	41	50	14	...	9	...	...
Total hardwoods	1027422	645433	188966	70307	44144	31118	19657	11526	7348	3940	2450	2236	297
Noncommercial	129623	89643	31445	6526	1382	493	85	33	16	...	...	...	...
All species	1378778	827316	269839	108456	70464	43878	26282	14230	8475	4464	2610	2457	306

Table 33—*Number of growing-stock trees on timberland by detailed species and diameter class, North Alabama Counties, 1990*

Species	All classes	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
					Diameter class (inches at breast height)						
					Thousand trees						
Shortleaf pine	8046	1952	2713	1731	1036	482	84	27	20	...	...
Loblolly pine	36847	14033	11517	5544	3003	1266	743	395	138	199	9
Virginia pine	19670	7692	6803	2853	1669	502	107	43	2	...	...
E. white pine	281	77	...	44	70	36	41	12	...	...	...
Redcedar	9737	5399	2898	907	337	109	58	11	...	16	...
Hemlock-spruce	10	...	...	...	...	...	...	10	...	...	...
Cypress	515	163	77	...	88	188	...	...	...	...	...
Total softwoods	75106	29316	24009	11079	6204	2582	1033	499	160	215	9
Select white oaks	22972	6690	4905	4226	2692	1819	1402	536	406	255	40
Select red oaks	5896	1207	1727	803	784	589	231	183	229	131	11
Other white oaks	18711	5104	5538	3307	2111	1006	805	358	242	225	17
Other red oaks	25112	6962	5445	4899	2850	2322	1168	761	267	378	59
Other hickories	29052	10278	7237	5064	3216	1494	934	510	179	138	3
Persimmon	1685	1096	390	162	26	...	...	10	...	...	...
Hard maple	3861	1885	1003	544	205	116	81	28	...	...	...
Soft maple	4576	2045	1150	671	226	214	127	24	70	51	...
Boxelder	40	...	...	40	...	...	...	...	...	...	...
Beech	363	147	51	...	...	22	53	22	21	35	13
Sweetgum	17055	5287	5364	3126	1686	821	364	222	111	74	...
Blackgum	5556	2197	1000	1280	583	204	187	24	66	14	...
Other gums/tupelos	95	...	53	...	23	...	13	...	...	7	...
White ash	4737	2284	877	790	268	194	147	71	60	46	...
Other ashes	2718	1235	652	468	212	91	15	23	...	22	...
Sycamore	534	202	122	105	48	...	15	20	10	13	...
Basswood	517	112	104	73	66	115	...	31	9	6	...
Yellow-poplar	5918	1146	985	1159	834	662	453	290	163	206	19
Magnolia	428	232	104	...	28	41	16	...	...	8	...
Willow	47	...	...	...	30	...	16	...	...	...	...
Black walnut	675	305	114	152	27	25	31	11	8	...	...
Black cherry	1776	1044	293	152	175	65	17	19	8	...	4
American elm	1315	748	253	128	97	39	15	19	10	5	...
Other elms	2018	632	910	210	106	102	15	12	18	12	...
River birch	283	...	65	...	43	62	68	19	28	...	...
Hackberry	2387	887	529	394	230	174	102	55	9	6	...
Black locust	1296	693	274	194	53	36	46	...	...	...	...
Other locusts	238	187	51	...	...	...	...	...	...	...	...
Sassafras	907	263	411	204	...	...	...	28	...	...	...
Dogwood	631	631	...	...	...	...	...	...	...	...	...
Other commercial	1191	758	157	186	41	35	14	...	...	...	...
Total hardwoods	162592	54256	39765	28336	16663	10249	6334	3275	1915	1632	166
All species	237698	83572	63774	39415	22867	12832	7367	3774	2076	1847	175

Table 34 – *Volume of growing stock on timberland by detailed species and diameter class, North Alabama Counties, 1990*

	Diameter class (inches at breast height)										
Species	All classes	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet										
Shortleaf pine	86.6	4.6	20.6	22.4	20.5	12.3	3.5	1.5	1.3	...	...
Loblolly pine	326.2	34.0	68.3	62.2	53.8	33.2	25.6	20.1	9.2	18.9	0.9
Virginia pine	141.2	21.2	42.0	32.6	27.4	12.4	4.0	1.5	0.1	...	...
E. white pine	3.8	0.3	...	0.3	1.0	0.7	1.1	0.4	...	...	...
Redcedar	43.4	11.8	14.1	8.4	4.2	2.0	1.7	0.5	...	0.6	...
Hemlock-spruce	0.4	...	...	...	...	...	...	0.4	...	...	...
Cypress	7.7	0.5	0.7	...	1.6	5.0	...	...	...	...	...
Total softwoods	609.3	72.4	145.7	125.9	108.5	65.5	35.9	24.4	10.6	19.5	0.9
Select white oaks	278.8	14.8	27.5	42.7	43.7	41.8	45.3	20.7	19.7	17.7	4.9
Select red oaks	85.7	2.7	9.8	8.4	13.0	12.7	7.6	8.1	12.6	9.6	1.2
Other white oaks	191.3	12.0	31.7	31.3	32.7	21.1	23.4	12.2	11.8	13.7	1.6
Other red oaks	301.6	17.0	29.5	49.7	45.4	51.6	34.1	29.3	13.4	24.6	6.9
Other hickories	278.4	22.5	36.7	50.3	54.8	36.9	32.0	22.6	11.1	10.9	0.6
Persimmon	7.5	2.8	1.7	1.8	0.6	...	...	0.6	...	...	...
Hard maple	25.2	4.4	5.5	5.6	3.4	2.5	2.1	1.7	...	...	...
Soft maple	33.5	4.5	5.8	5.7	3.5	4.0	3.2	0.8	3.2	2.9	...
Boxelder	0.3	...	...	0.3	...	...	...	...	...	...	...
Beech	7.6	0.5	0.3	...	...	0.4	1.5	0.9	1.0	2.4	0.6
Sweetgum	157.4	9.3	29.9	31.8	28.9	20.4	13.2	10.8	7.2	6.0	...
Blackgum	43.5	4.6	4.3	12.1	8.1	3.9	5.6	0.9	3.2	0.7	...
Other gums/tupelos	1.6	...	0.3	...	0.6	...	0.5	...	...	0.2	...
White ash	35.9	4.3	4.6	7.3	3.5	4.1	3.9	2.5	2.7	3.1	...
Other ashes	20.8	3.9	3.5	5.7	3.0	2.2	0.4	0.7	...	1.4	...
Sycamore	5.3	0.5	0.7	1.0	0.7	...	0.2	0.9	0.6	0.7	...
Basswood	7.9	0.2	0.6	0.8	1.1	2.9	...	1.2	0.7	0.6	...
Yellow-poplar	113.9	3.1	4.7	13.1	15.8	18.2	15.4	14.1	9.1	17.0	3.5
Magnolia	3.2	0.4	0.7	...	0.4	0.9	0.5	...	...	0.2	...
Willow	0.6	...	...	...	0.3	...	0.3	...	...	...	...
Black walnut	4.6	0.4	0.4	1.0	0.2	0.5	0.7	0.6	0.8	...	...
Black cherry	10.3	1.7	1.0	1.3	2.5	1.6	0.6	0.5	0.4	...	0.6
American elm	9.3	1.5	1.6	1.6	1.5	0.9	0.5	0.9	0.3	0.3	...
Other elms	15.6	1.4	4.7	2.1	2.0	2.3	0.3	0.5	1.0	1.3	...
River birch	7.4	...	0.4	...	0.9	1.6	2.2	1.0	1.4	...	...
Hackberry	19.9	2.6	3.0	2.9	2.9	3.5	2.5	2.0	0.2	0.4	...
Black locust	7.4	1.5	1.2	1.7	0.8	0.6	1.5	...	...	...	...
Other locusts	1.0	0.6	0.4	...	...	...	...	...	...	...	...
Sassafras	4.9	0.6	1.5	1.7	...	...	...	1.2	...	...	...
Dogwood	1.1	1.1	...	...	...	...	...	...	...	...	...
Other commercial	5.2	1.7	0.8	1.0	0.6	0.7	0.5	...	...	...	...
Total hardwoods	1686.8	120.6	212.9	280.9	270.8	235.2	197.9	134.5	100.4	113.6	19.9
All species	2296.1	193.0	358.6	406.8	379.3	300.7	233.8	158.9	111.0	133.0	20.9

Table 35 – *Volume of growing stock in the saw-log portion of sawtimber trees on timberland by detailed species and diameter class, North Alabama Counties, 1990*

Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
				Diameter class (inches at breast height)					
	Million cubic feet								
Shortleaf pine	51.5	17.9	17.7	10.1	3.1	1.4	1.3	...	...
Loblolly pine	191.9	48.7	47.5	29.7	23.2	17.9	7.8	16.5	0.8
Virginia pine	61.7	24.8	22.4	10.0	3.3	1.1	0.1	...	...
E. white pine	3.2	0.3	0.8	0.7	1.0	0.4	...	...	...
Redcedar	14.6	6.7	3.7	1.7	1.6	0.4	...	0.5	...
Hemlock-spruce	0.3	...	...	...	...	0.3	...	...	...
Cypress	6.0	...	1.4	4.6	...	...	...	...	...
Total softwoods	329.2	98.3	93.5	56.6	32.2	21.6	9.1	17.0	0.8
Select white oaks	155.0	...	31.8	33.7	36.4	17.4	16.5	15.0	4.0
Select red oaks	52.8	...	9.3	10.2	6.3	7.2	10.5	8.2	1.2
Other white oaks	91.4	...	23.7	16.5	19.1	10.1	9.7	11.1	1.2
Other red oaks	163.3	...	31.8	41.6	28.3	24.6	10.8	19.8	6.5
Other hickories	132.4	...	40.0	29.0	26.3	18.1	9.4	9.3	0.4
Persimmon	1.0	...	0.5	...	...	0.6	...	...	...
Hard maple	7.6	...	2.6	2.1	1.7	1.3	...	...	...
Soft maple	13.4	...	2.4	3.1	2.5	0.6	2.6	2.3	...
Beech	5.2	...	...	0.2	1.2	0.8	0.7	1.8	0.4
Sweetgum	67.3	...	19.5	15.7	11.3	9.4	6.3	5.2	...
Blackgum	17.7	...	5.7	3.1	4.8	0.8	2.7	0.6	...
Other gums/tupelos	1.0	...	0.5	...	0.3	...	...	0.2	...
White ash	15.7	...	2.4	3.4	3.1	2.0	2.2	2.5	...
Other ashes	6.3	...	2.2	1.7	0.4	0.6	...	1.3	...
Sycamore	2.6	...	0.5	...	0.2	0.8	0.5	0.6	...
Basswood	4.8	...	0.7	2.3	...	0.7	0.6	0.5	...
Yellow-poplar	77.0	...	10.6	15.0	13.4	12.3	7.6	15.1	3.0
Magnolia	1.7	...	0.3	0.8	0.4	...	...	0.2	...
Willow	0.4	...	0.2	...	0.2	...	...	...	...
Black walnut	2.3	...	0.2	0.3	0.6	0.5	0.7	...	...
Black cherry	4.9	...	1.8	1.3	0.5	0.4	0.3	...	0.6
American elm	3.4	...	1.0	0.7	0.5	0.7	0.2	0.2	...
Other elms	5.9	...	1.5	2.0	0.2	0.4	0.9	1.0	...
River birch	5.8	...	0.6	1.2	2.0	0.9	1.0	...	...
Hackberry	8.7	...	1.9	2.7	1.9	1.8	0.1	0.3	...
Black locust	2.3	...	0.6	0.5	1.2	...	...	...	...
Sassafras	0.8	...	...	...	...	0.8	...	...	...
Other commercial	1.5	...	0.4	0.6	0.4	...	...	...	...
Total hardwoods	852.3	...	192.6	187.8	163.4	112.9	83.2	95.1	17.3
All species	1181.5	98.3	286.2	244.4	195.6	134.4	92.4	112.1	18.1

Table 36 – *Volume of timber on timberland by species and class of timber, North Alabama Counties, 1990*

Species	Live tree	Growing stock	Rough	Rotten
	Million cubic feet			
Shortleaf pine	87.0	86.6	0.5	...
Loblolly pine	331.0	326.2	4.8	...
Virginia pine	151.0	141.2	9.6	0.2
E. white pine	4.2	3.8	0.3	...
Redcedar	48.7	43.4	4.4	0.9
Hemlock-spruce	0.6	0.4	0.2	...
Cypress	7.7	7.7	...	...
Total softwoods	630.2	609.3	19.8	1.1
Select white oaks	300.2	278.8	14.5	6.9
Select red oaks	95.5	85.7	6.5	3.3
Other white oaks	213.2	191.3	15.0	6.8
Other red oaks	324.9	301.6	14.6	8.8
Other hickories	298.1	278.4	15.4	4.2
Persimmon	9.4	7.5	1.9	...
Hard maple	28.5	25.2	2.4	1.0
Soft maple	53.4	33.5	14.8	5.1
Boxelder	0.5	0.3	0.2	...
Beech	13.9	7.6	1.0	5.3
Sweetgum	164.4	157.4	6.9	0.1
Blackgum	49.0	43.5	4.3	1.3
Other gums/tupelos	2.2	1.6	0.5	...
White ash	43.6	35.9	6.0	1.7
Other ashes	21.7	20.8	0.5	0.4
Sycamore	6.1	5.3	0.6	0.2
Basswood	8.3	7.9	0.4	...
Yellow-poplar	117.0	113.9	1.9	1.2
Magnolia	3.8	3.2	0.2	0.4
Willow	1.7	0.6	1.1	...
Black walnut	6.0	4.6	1.1	0.2
Black cherry	14.3	10.3	4.0	...
American elm	11.1	9.3	1.8	...
Other elms	18.9	15.6	2.5	0.8
River birch	8.0	7.4	...	0.6
Other birches	0.4	...	0.4	...
Hackberry	23.3	19.9	3.4	...
Black locust	8.7	7.4	0.5	0.8
Other locusts	1.3	1.0	0.2	...
Sassafras	5.6	4.9	0.7	...
Dogwood	4.0	1.1	2.7	0.1
Holly	0.2	...	0.2	...
Other commercial	6.4	5.2	0.9	0.3
Total hardwoods	1863.3	1686.8	127.0	49.6
Noncommercial	21.5	...	21.5	...
All species	2515.0	2296.1	168.2	50.7

Table 37 – *Volume of sawtimber for tree grade 1 on timberland by detailed species and diameter class, North Alabama Counties, 1990*

Species	Diameter class (inches at breast height)								
	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Shortleaf pine	107.0	34.5	29.4	18.1	11.9	5.6	7.3	...	...
Loblolly pine	349.2	48.6	61.2	66.7	47.7	59.1	17.1	48.7	...
Virginia pine	12.8	2.7	1.8	2.9	3.0	2.5	...	...	...
Redcedar	74.5	34.0	18.9	7.6	8.4	2.8	...	2.7	...
Hemlock-spruce	2.0	...	...	...	...	2.0	...	...	...
Cypress	31.1	...	7.6	23.6	...	...	...	...	...
Total softwoods	576.5	119.8	118.8	118.9	71.1	72.1	24.4	51.4	...
Select white oaks	64.2	...	...	...	13.4	7.6	16.0	24.8	2.3
Select red oaks	32.0	...	...	...	6.9	6.0	10.8	8.4	...
Other white oaks	34.7	...	...	...	2.1	4.5	9.8	18.3	...
Other red oaks	40.9	...	...	...	2.0	11.9	2.9	12.4	11.7
Other hickories	28.6	...	...	...	5.8	10.0	5.0	7.8	...
Soft maple	5.6	...	...	...	...	...	3.2	2.4	...
Sweetgum	8.9	...	...	...	...	3.6	...	5.3	...
Blackgum	12.0	...	...	...	2.6	...	9.4	...	...
White ash	16.6	...	...	...	1.7	6.0	...	8.9	...
Other ashes	3.6	...	...	...	...	...	...	3.6	...
Sycamore	4.4	...	...	...	...	4.4	...	...	...
Basswood	2.3	...	...	...	...	2.3	...	...	...
Yellow-poplar	52.2	...	...	...	...	4.7	2.4	45.0	...
Total hardwoods	305.9	...	...	...	34.5	61.1	59.3	136.9	14.0
All species	882.4	119.8	118.8	118.9	105.6	133.2	83.7	188.3	14.0

Table 38 – *Volume of sawtimber for tree grade 2 on timberland by detailed species and diameter class, North Alabama Counties, 1990*

Species	Diameter class (inches at breast height)								
	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Shortleaf pine	53.9	12.6	14.9	20.5	5.9	...	...	...	...
Loblolly pine	168.8	37.4	24.9	18.9	22.2	30.3	5.7	29.3	...
Virginia pine	8.2	...	5.6	1.9	...	...	0.6	...	...
Total softwoods	230.9	50.1	45.4	41.4	28.1	30.3	6.3	29.3	...
Select white oaks	239.8	...	...	42.6	89.8	41.1	28.8	30.2	7.3
Select red oaks	80.8	...	...	12.3	11.7	17.4	26.2	13.2	...
Other white oaks	104.1	...	...	18.7	36.3	19.4	14.5	12.6	2.5
Other red oaks	172.8	...	...	20.7	35.7	59.5	13.5	37.0	6.3
Other hickories	155.8	...	...	41.9	39.3	34.5	21.8	18.3	...
Hard maple	5.6	...	...	...	...	5.6	...	...	...
Soft maple	3.2	...	...	1.8	1.4	...	...	...	...
Beech	2.1	...	...	...	...	...	...	2.1	...
Sweetgum	65.7	...	...	15.9	13.8	18.3	13.6	4.2	...
Blackgum	12.4	...	...	4.4	5.6	0.7	1.6	...	...
White ash	38.1	...	...	5.4	14.6	3.9	4.6	9.7	...
Other ashes	4.0	...	...	2.7	...	1.3	...	...	...
Sycamore	2.9	...	...	...	...	...	2.9	...	...
Basswood	12.0	...	...	4.6	...	...	3.9	3.5	...
Yellow-poplar	83.8	...	...	15.2	22.2	27.3	8.3	9.8	1.1
Black cherry	5.2	...	...	3.0	...	...	2.2	...	...
American elm	3.0	...	...	...	3.0	...	...	...	...
Other elms	8.8	...	...	2.1	...	2.6	...	4.0	...
River birch	10.0	...	...	...	3.9	6.0	...	...	...
Hackberry	3.8	...	...	...	1.3	2.5	...	...	...
Other commercial	2.7	...	...	...	2.7	...	...	...	...
Total hardwoods	1016.4	...	...	191.4	281.2	240.2	141.8	144.6	17.2
All species	1247.2	50.1	45.4	232.8	309.2	270.5	148.1	173.9	17.2

Table 39 – *Volume of sawtimber for tree grade 3 on timberland by detailed species and diameter class, North Alabama Counties, 1990*

	Diameter class (inches at breast height)								
Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Shortleaf pine	129.7	50.8	57.7	17.7	...	3.5	...	...	...
Loblolly pine	588.6	170.4	180.7	85.9	64.9	22.7	30.1	34.0	...
Virginia pine	309.9	126.6	112.7	48.0	17.9	4.7	...	...	...
E. white pine	16.0	1.3	4.1	3.3	5.1	2.1	...	...	...
Total softwoods	1044.3	349.1	355.3	154.9	87.9	33.1	30.1	34.0	...
Select white oaks	406.0	...	132.5	99.5	78.8	35.8	22.7	27.8	8.9
Select red oaks	150.8	...	39.2	27.1	16.5	16.4	23.3	22.5	5.8
Other white oaks	276.7	...	96.2	58.5	48.4	26.0	26.2	18.7	2.7
Other red oaks	454.5	...	105.1	139.1	90.9	53.5	25.5	37.3	3.2
Other hickories	461.6	...	180.8	98.8	89.2	47.5	19.7	25.7	...
Persimmon	2.9	...	2.9	...	...	...	...	...	...
Hard maple	23.9	...	11.6	7.2	1.6	3.5	...	...	..
Soft maple	20.8	...	3.0	5.1	3.5	2.2	7.1	...	...
Beech	6.2	...	...	...	...	...	2.0	4.2	...
Sweetgum	269.1	...	94.7	60.5	40.4	30.3	20.4	22.9	...
Blackgum	61.3	...	24.7	8.0	17.3	4.1	5.8	1.5	...
Other gums/tupelos	5.4	...	2.4	...	2.3	...	...	0.7	...
White ash	32.4	...	11.0	11.7	...	2.6	7.1	...	...
Other ashes	14.5	...	7.7	2.7	...	...	...	4.1	...
Sycamore	4.5	...	1.5	...	...	...	...	3.0	...
Basswood	11.2	...	2.0	9.2	...	...	...	...	...
Yellow-poplar	168.6	...	41.1	34.1	27.8	22.0	17.5	24.4	1.5
Magnolia	7.3	...	...	4.9	2.5	...	...	...	...
Willow	2.0	...	0.7	...	1.2	...	...	...	...
Black walnut	14.1	...	0.7	1.6	2.7	3.0	6.0	...	...
Black cherry	7.1	...	4.0	...	3.1	...	...	...	...
American elm	8.6	...	5.7	...	...	3.0	...	...	...
Other elms	19.1	...	5.9	6.8	...	...	3.3	3.1	...
River birch	25.8	...	3.4	7.0	8.5	...	6.9	...	...
Hackberry	28.8	...	7.5	12.1	7.3	1.9	...	...	...
Black locust	8.9	...	2.4	1.4	5.1	...	...	...	...
Sassafras	3.1	...	...	...	...	3.1	...	...	...
Other commercial	5.4	...	2.0	3.5	...	...	...	...	...
Total hardwoods	2500.6	...	788.7	598.7	447.1	254.8	193.3	195.9	22.1
All species	3544.9	349.1	1143.9	753.6	535.0	287.8	223.4	229.9	22.1

Table 40 – *Volume of sawtimber for tree grade 4 on timberland by detailed species and diameter class, North Alabama Counties, 1990*

Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Select white oaks	145.6	...	37.4	43.7	24.7	9.0	25.9	3.7	1.2
Select red oaks	35.9	...	8.5	12.6	1.1	3.5	7.7	1.4	1.2
Other white oaks	83.5	...	28.6	11.8	21.9	7.6	6.1	7.3	...
Other red oaks	232.1	...	60.8	68.8	35.8	18.7	22.9	23.5	1.6
Other hickories	121.7	...	41.3	23.3	21.6	19.1	8.5	5.1	2.8
Persimmon	3.5	...	...	...	...	3.5	...	...	...
Hard maple	13.6	...	...	4.8	8.8	...	...	...	...
Soft maple	34.8	...	8.9	7.7	8.7	...	1.5	8.0	...
Beech	17.1	...	...	1.3	7.3	...	2.9	5.7	...
Sweetgum	31.9	...	9.0	8.2	10.6	2.2	1.9	...	...
Blackgum	7.5	...	4.1	1.5	1.8	...	...	...	...
White ash	1.3	...	...	...	1.3	...	...	...	...
Other ashes	10.2	...	4.2	4.0	2.0	...	...	...	...
Basswood	1.5	...	1.5	...	...	...	...	...	...
Yellow-poplar	119.9	...	18.4	38.6	20.1	17.8	17.2	7.7	...
Magnolia	1.8	...	1.8	...	...	...	...	...	...
Black walnut	1.0	...	...	...	1.0	...	...	...	...
Black cherry	10.7	...	6.1	4.5	...	...	...	...	...
American elm	8.4	...	...	4.1	...	1.7	1.2	1.3	...
Other elms	7.0	...	2.4	2.4	...	...	2.3	...	...
Hackberry	7.7	...	2.3	...	1.2	2.3	...	2.0	...
Black locust	2.0	...	...	...	2.0	...	...	...	...
Total hardwoods	898.8	...	235.3	237.4	170.0	85.4	98.1	65.8	6.8
All species	898.8	...	235.3	237.4	170.0	85.4	98.1	65.8	6.8

Diameter class (inches at breast height)

Table 41 – *Volume of sawtimber on timberland by species and ownership class, North Alabama Counties, 1990*

Species	All ownerships	National forest	Other public	Forest industry	Forest industry-leased	Other private
	Million board feet					
Yellow pines	1758.0	111.2	107.8	81.1	...	1457.9
Cypress	31.1	...	...	...	...	31.1
Redcedar	75.1	13.7	...	6.1	1.2	54.2
Other softwoods	18.0	16.0	...	...	...	2.0
Total softwoods	1882.3	140.9	107.8	87.2	1.2	1545.3
Select white-red oaks	1220.9	81.0	124.9	26.9	...	988.1
Other white-red oaks	1468.5	58.6	155.5	35.1	1.6	1217.6
Hickory	798.0	32.5	55.6	10.9	3.6	695.4
Hard maple	45.6	1.0	2.7	...	...	41.8
Sweetgum	388.6	1.4	92.1	1.4	8.6	285.1
Tupelo and blackgum	104.7	0.7	7.5	1.1	...	95.5
Ash-walnut-black cherry	173.7	10.0	2.2	5.1	1.6	154.8
Yellow-poplar	458.2	16.8	19.1	16.1	...	406.2
Other hardwoods	334.4	2.1	40.6	4.3	1.5	286.0
Total hardwoods	4992.7	204.2	500.3	100.9	16.9	4170.4
All species	6875.0	345.0	608.1	188.1	18.1	5715.7

Table 42 – *Average net annual growth, average annual removals, and average annual mortality of live trees*[1] *by county and species group, North Alabama Counties, 1990*

	Growth			Removals			Mortality		
County	All species	Softwood	Hardwood	All species	Softwood	Hardwood	All species	Softwood	Hardw
	Million cubic feet								
Colbert	10.0	4.1	6.0	3.8	0.7	3.1	1.8	1.0	0.8
De Kalb	9.5	2.6	6.9	13.1	6.0	7.1	4.5	1.4	3.1
Franklin	13.9	4.3	9.6	8.6	5.1	3.5	3.7	2.3	1.4
Jackson	14.6	2.0	12.6	5.6	1.0	4.6	5.6	1.4	4.3
Lauderdale	8.8	2.6	6.2	6.9	3.5	3.4	1.8	0.5	1.3
Lawrence	8.7	2.9	5.8	6.2	3.8	2.4	2.8	1.4	1.4
Limestone	3.0	0.2	2.8	4.8	1.6	3.2	1.7	...	1.7
Madison	8.4	4.9	3.5	0.4	0.1	0.3	5.1	0.5	4.6
Marshall	8.2	3.1	5.1	6.2	3.6	2.6	2.1	0.9	1.2
Morgan	9.2	4.6	4.6	5.1	2.8	2.3	2.7	0.7	2.0
All counties	94.3	31.2	63.1	60.7	28.3	32.4	31.8	10.1	21.7

[1] Excludes trees less than 5.0 inches in diameter at breast height.

Table 43 – *Average net annual growth, average annual removals, and average annual mortality of live trees*[1] *by ownership class and species group, North Alabama Counties, 1990*

	Growth			Removals			Mortality		
Ownership class	All classes	Softwood	Hardwood	All species	Softwood	Hardwood	All Species	Softwood	Hardwo
	Million cubic feet-								
National forest	3.7	1.3	2.3	1.9	0.7	1.3	1.0	0.7	0.3
Other public	5.3	1.4	3.9	0.3	0.2	0.2	2.3	0.1	2.2
Forest industry	8.4	5.6	2.8	5.9	4.1	1.8	1.7	0.9	0.7
Forest industry-leased	0.8	...	0.8	...	...	...	...	...	...
Other private	76.1	22.9	53.2	52.5	23.4	29.1	26.8	8.3	18.5
All ownerships	94.3	31.2	63.1	60.7	28.3	32.4	31.8	10.1	21.7

[1] Excludes trees less than 5.0 inches in diameter at breast height.

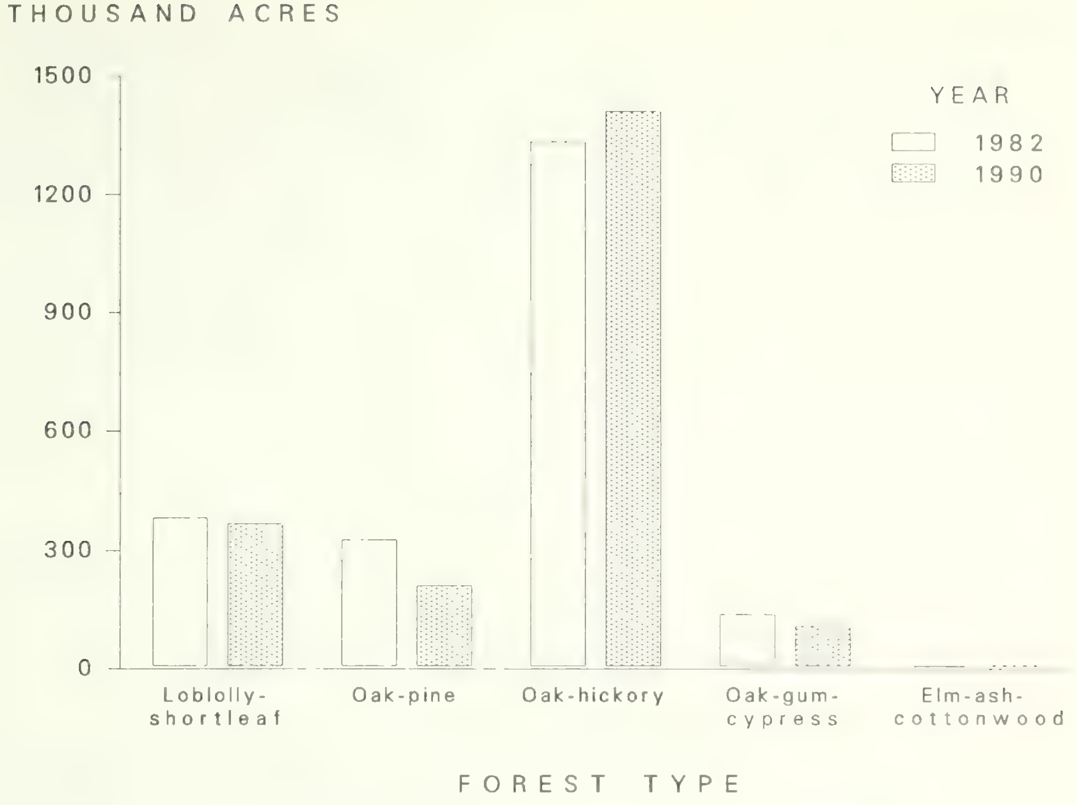

Figure 1.—*Area of timberland by forest type, North Alabama, 1982 and 1990.*

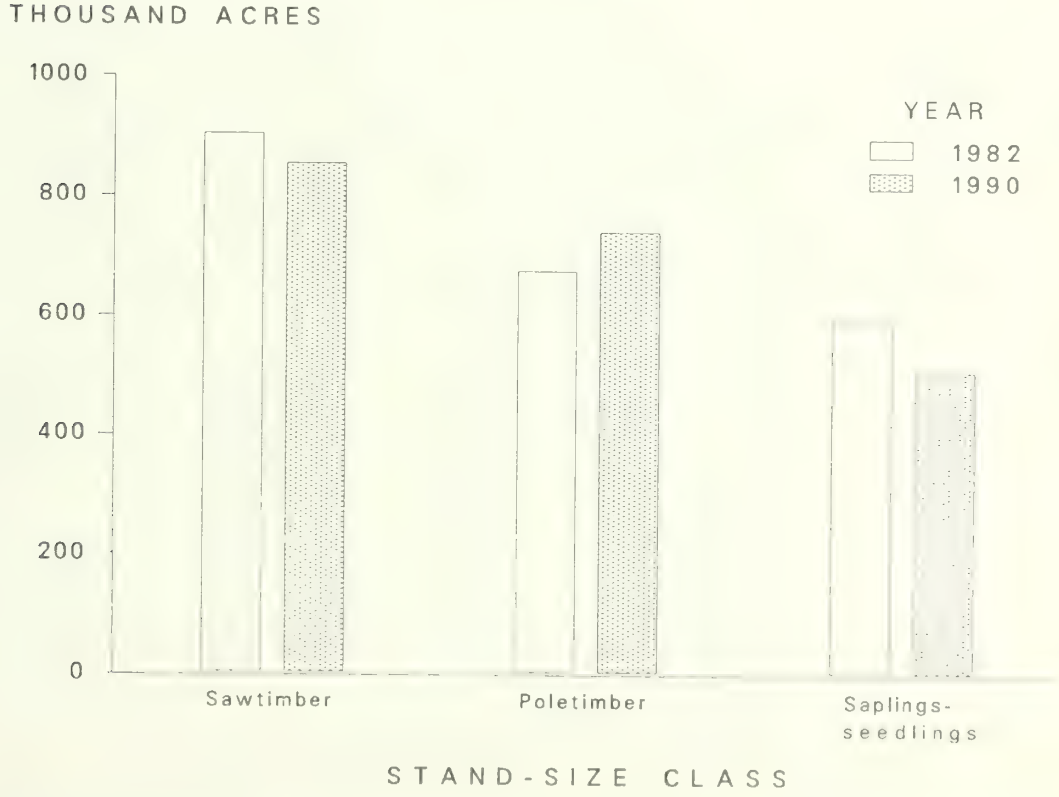

Figure 2.—*Area of timberland by stand-size class, North Alabama, 1982 and 1990.*

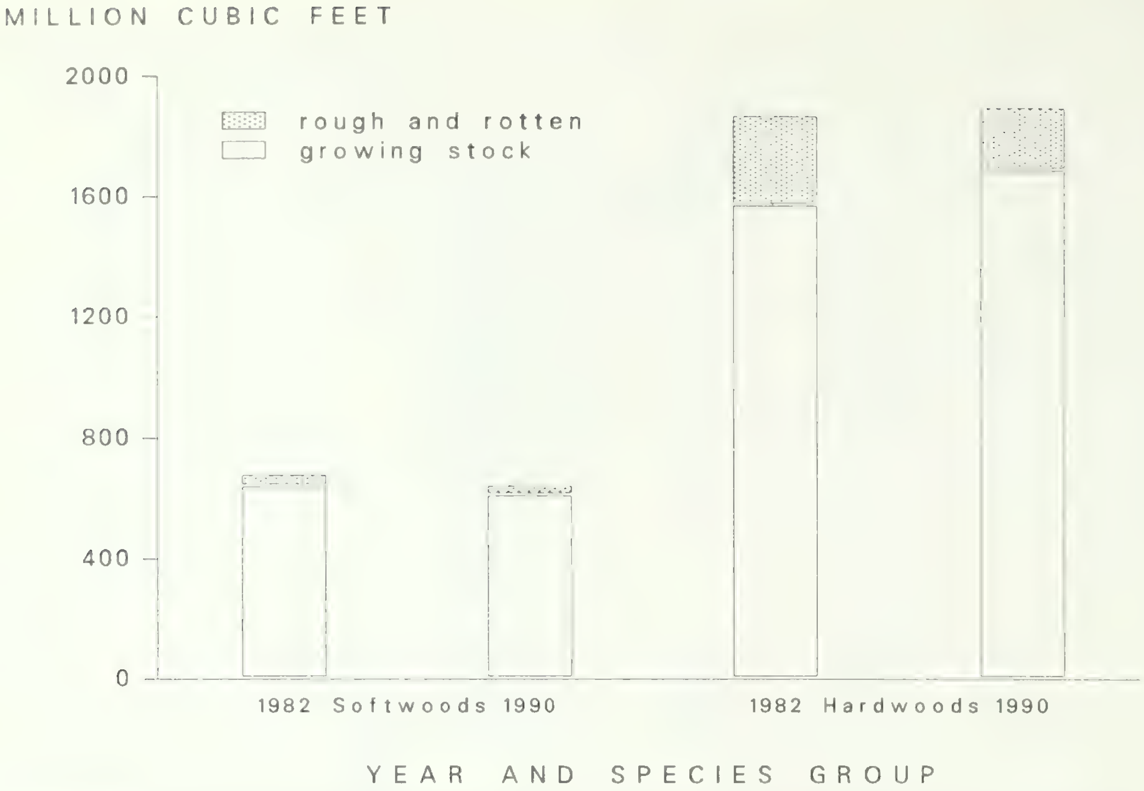

Figure 3. – *Volume of live trees on timberland by species group and class of timber, North Alabama, 1982 and 1990.*

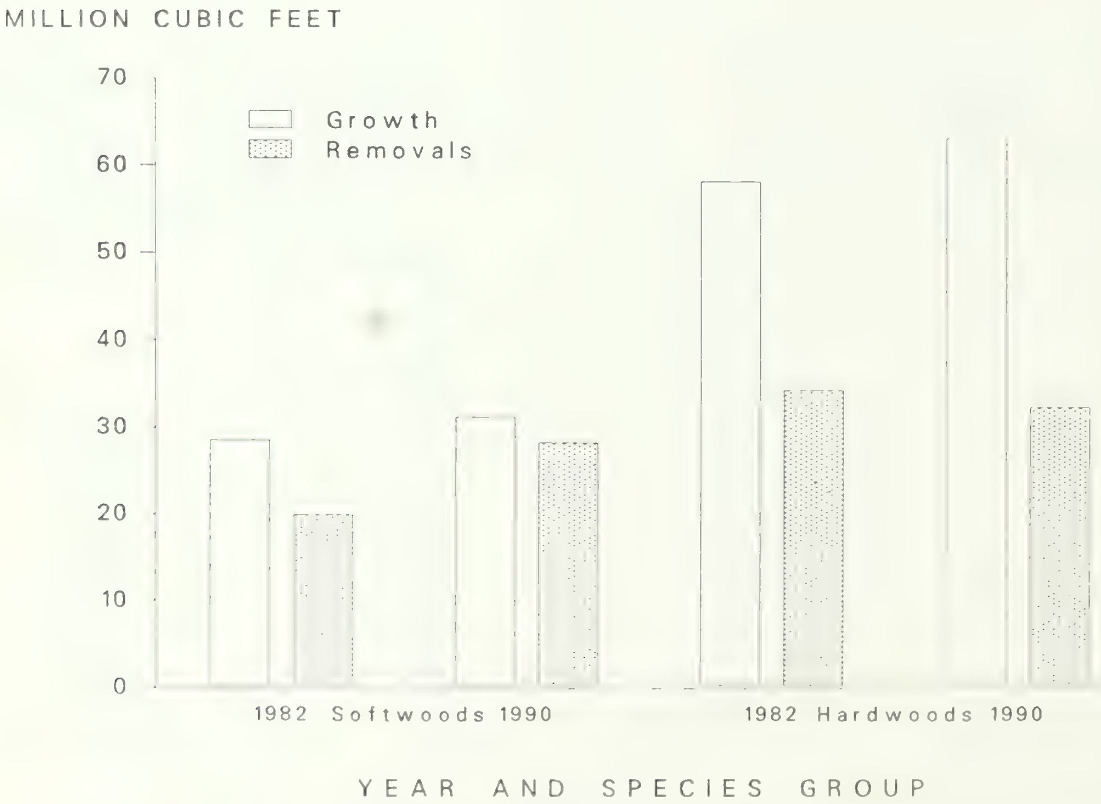

Figure 4. – *Average net annual growth and average annual removals of live trees on timberland by species group, North Alabama, 1982 and 1990.*

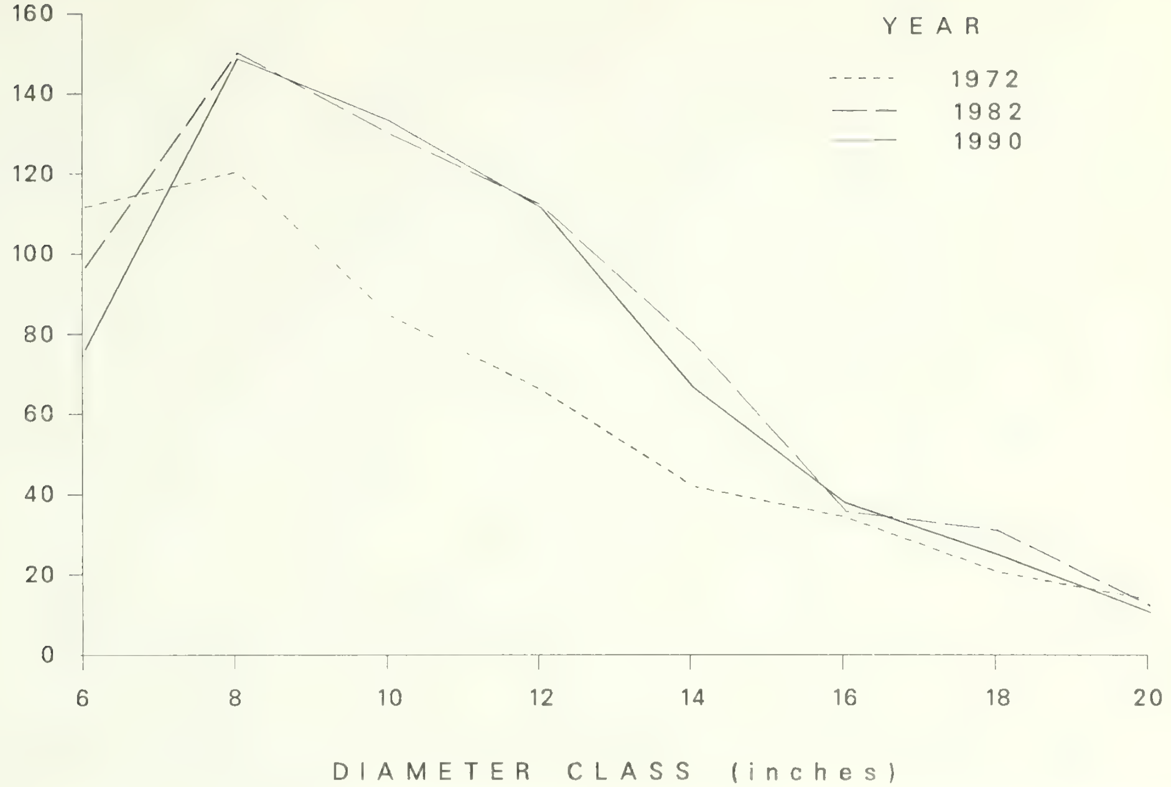

Figure 5.—*Volume of live softwood trees on timberland by diameter class,North Alabama, 1972, 1982 and 1990.*

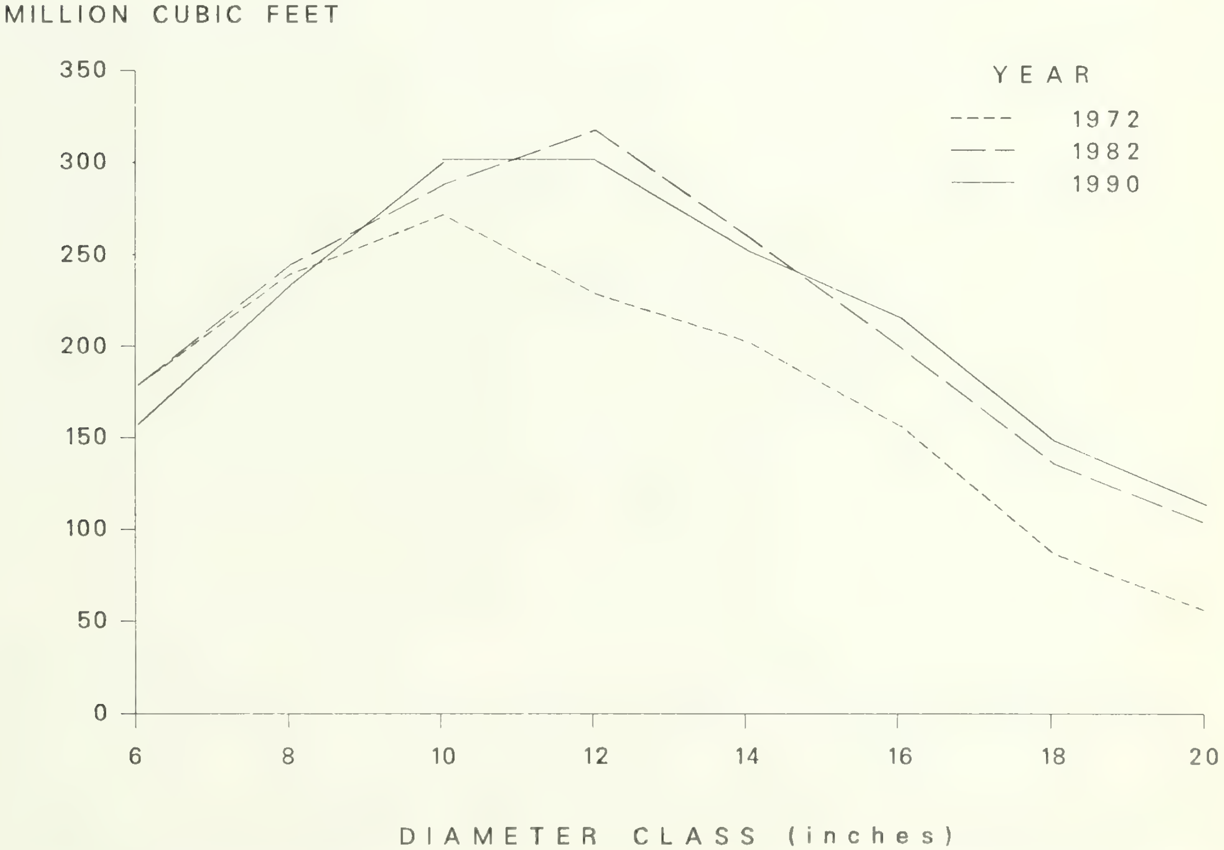

Figure 6.—*Volume of live hardwood trees on timberland by diameter class, North Alabama, 1972, 1982, and 1990.*

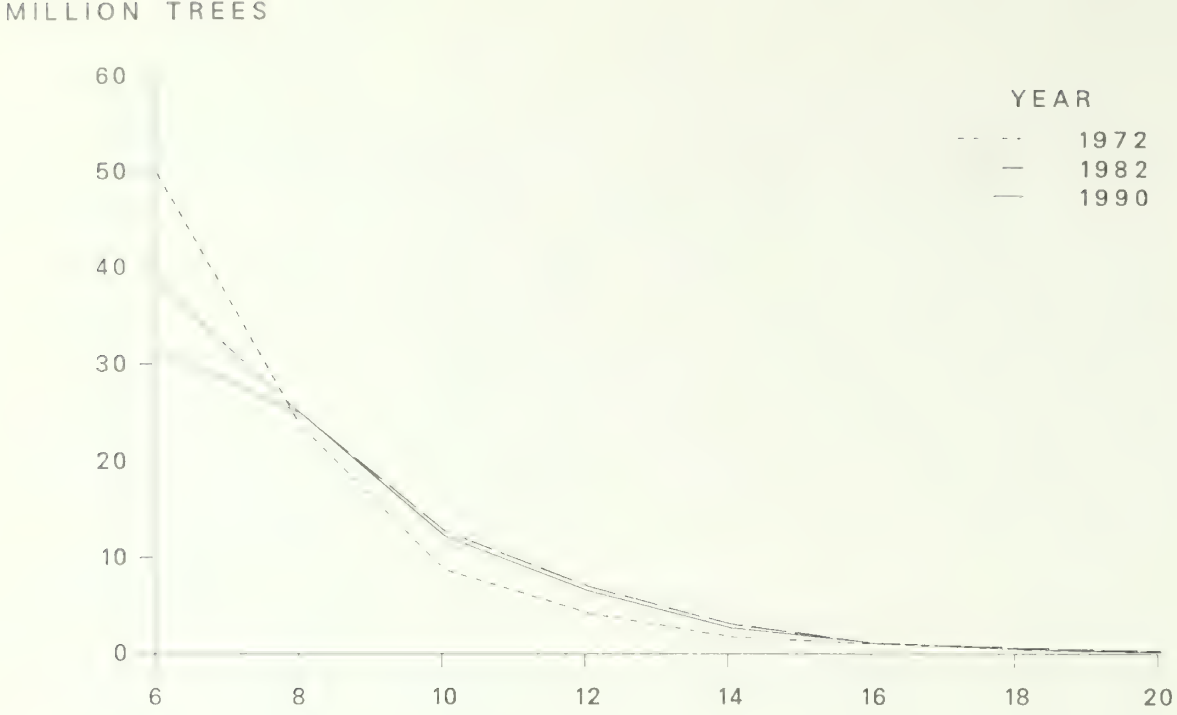

Figure 7.—*Number of live softwood trees on timberland by diameter class, North Alabama, 1972, 1982 and 1990.*

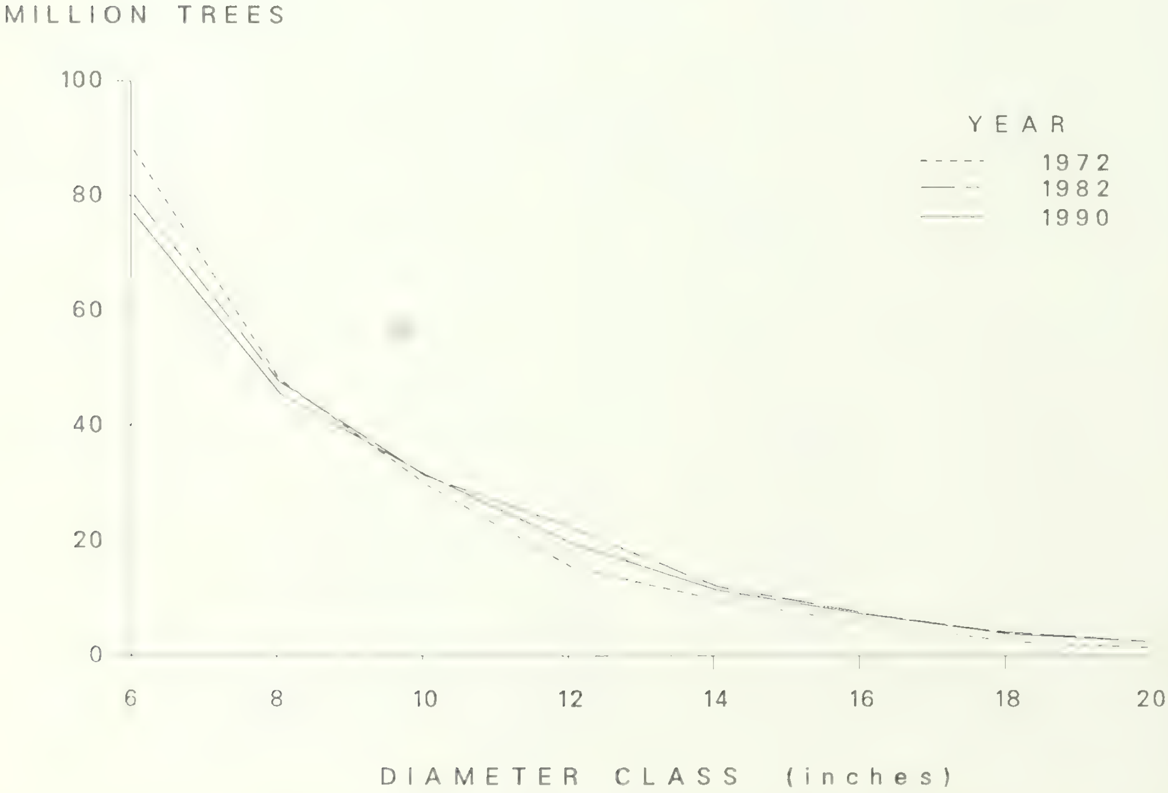

Figure 8.—*Number of live hardwood trees on timberland by diameter class, North Alabama, 1972, 1982, and 1990.*

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Tabulates forest resource information from a new inventory of the North Counties of Alabama.

Additional Keywords: Area, volume, forest type, stand size, ownership.

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SO-150

Forest Statistics for West-Central Alabama Counties — 1990

William H. McWilliams, K. L. Duncan, and John S. Vissage

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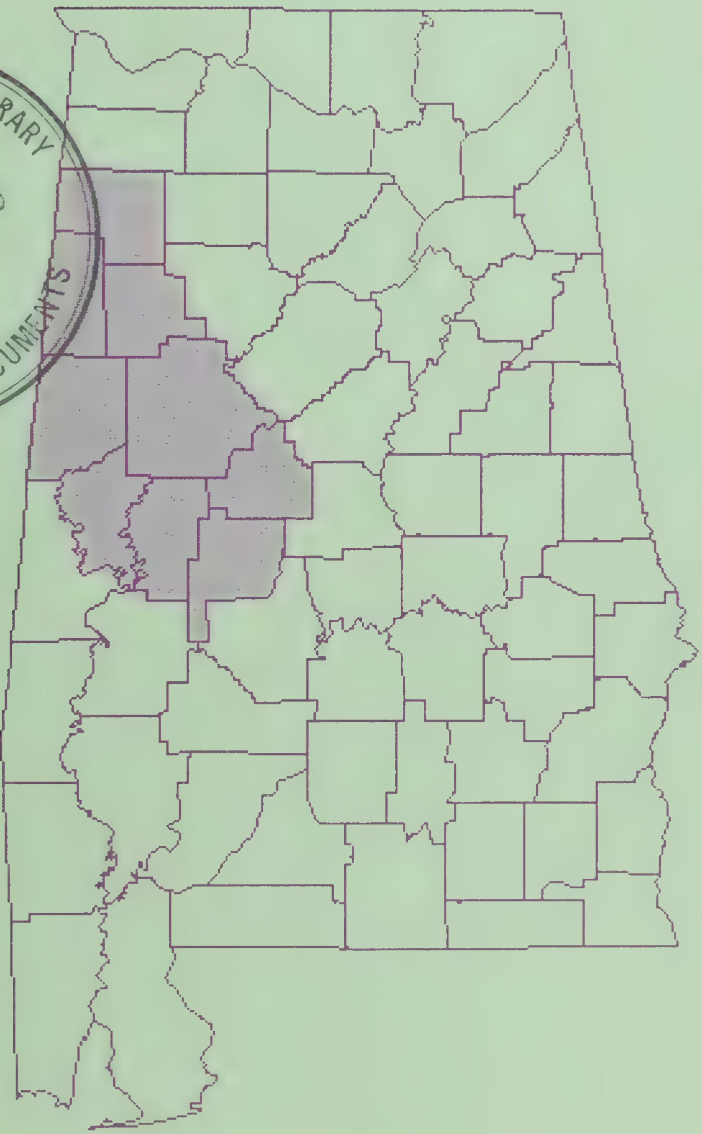

SUMMARY

The 1990 forest inventory of West-Central Alabama revealed the following:

- Timberland area is 3,357.5 thousand acres, an increase of 3 percent.
- The area of planted pine stands more than doubled. Fifty-eight percent of the region's pine forest is of artificial origin, compared to 29 percent in 1982.
- Live-tree inventory volume totals 3,871.2 million cubic feet, a decrease of 7 percent. The volume of live softwoods decreased by 18 percent.
- The distribution of softwood live-tree volume by diameter class shows large decreases in all but the 16-inch class.
- Hardwood sawtimber volume is 5,812.9 million board feet, an increase of 24 percent.
- Average net growth of live trees did not change significantly since the previous inventory period. The net growth of hardwoods increased by 21 percent. The net growth of softwoods decreased by 13 percent.
- Removals of live trees were 44 percent higher than the previous inventory period.
- Removals now exceed net growth due to heavy cutting of softwoods. The growth-to-removals ratio is 1.1:1.0 for hardwoods and 0.7:1.0 for softwoods.

FOREWORD

The USDA-Forest Service, Southern Forest Experiment Station, Forest Inventory and Analysis unit (SO-FIA), conducts forest inventories covering the States of Alabama, Arkansas, Louisiana, Mississippi, Oklahoma, Tennessee, Texas, and the island of Puerto Rico.

The SO-FIA forest inventories are part of a nationwide effort originally authorized by the McSweeney-McNary Act of 1928. More recent legislation pertinent to the SO-FIA mission includes the Forest and Rangeland Renewable Resources Planning Act of 1974 and the Forest and Rangeland Renewable Resources Research Act of 1978. The SO-FIA mission is to develop, analyze, and maintain forest resource information that is essential for formulation of forest policies and programs.

ACKNOWLEDGMENTS

The SO-FIA gratefully acknowledges the cooperation and excellent assistance provided by the Alabama Forestry Commission in collecting field data. Appreciation is also expressed for the cooperation of other public agencies and private landowners in providing access to measurement plots.

The following members of the SO-FIA field staff completed the field measurements:

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[1] Core tables are presented in response to the Southern Industrial Forestry Research Council's recommendations. These ables are identical among Forest Inventory and Analysis units in the eastern United States.

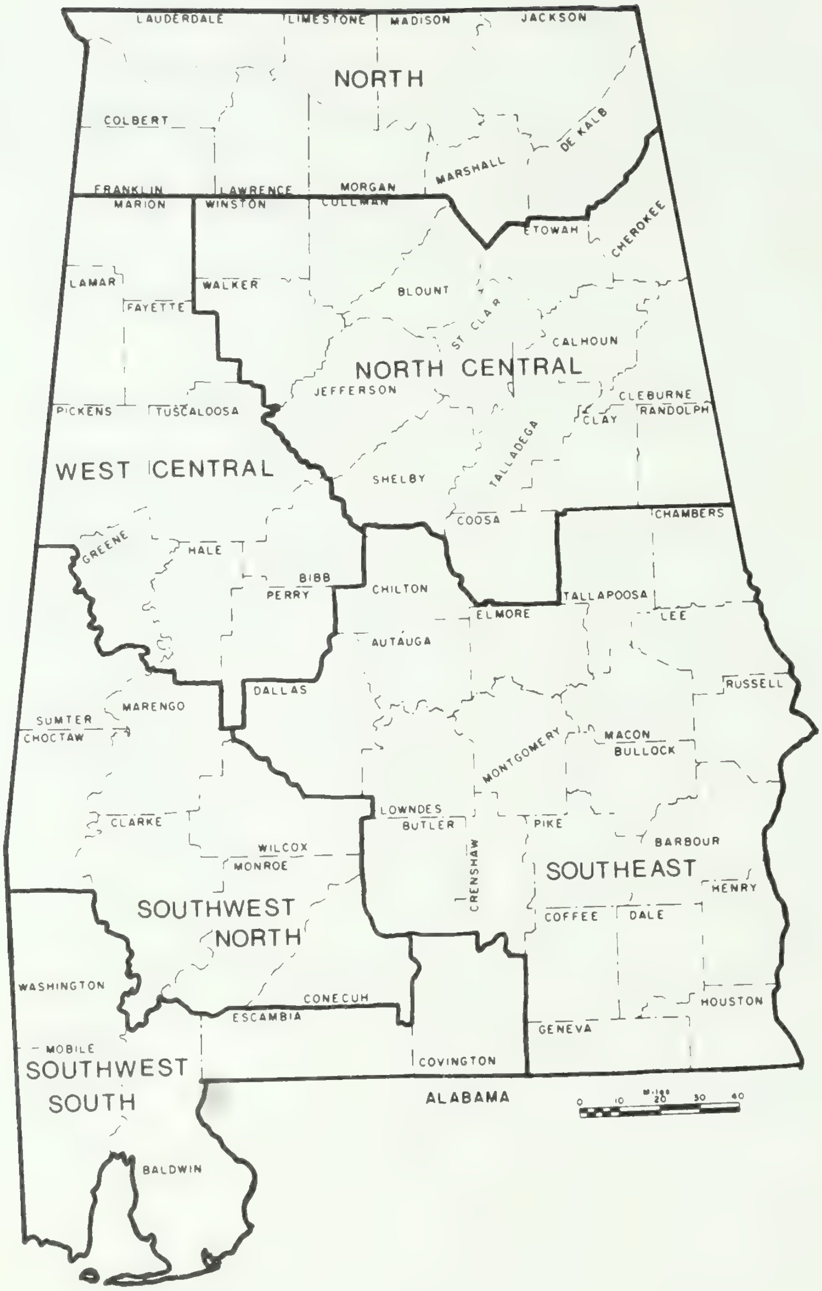

Figure I.—*Forest survey regions in Alabama.*

Forest Statistics for West-Central Alabama Counties — 1990

William H. McWilliams, K.L. Duncan, and John S. Vissage

INTRODUCTION

Tabulated results were derived from data obtained during a recent forest inventory of West-Central Alabama (fig. I). Core tables (1 to 25) are compatible among Forest Inventory and Analysis units in the Eastern U.S. Other tables (26 to 43) supplement the information contained in the core tables. Comparisons are made between results of the 1990 inventory and previous inventories conducted in 1982 and 1972.

METHODS

The SO-FIA uses a two-phase sample of temporary aerial-photo points and a systematic grid of permanent ground plots. The area of forested land was determined by photointerpretation of temporary points and field checks of permanent plots. Field measurements were conducted on a subset of permanent plots spaced 3 miles apart. Tree data were collected on measurement plots that were forested at the time of the current inventory, or were forested at the time of the previous inventory.

Each measurement plot consisted of 10 satellite points spread over an acre of forest. At each point, trees 5.0 inches in diameter at breast height and larger were selected for measurement on a variable-radius plot defined by a 37.5 BAF prism. Trees from 1.0 to 4.9 inches in diameter were tallied on 1/275 acre fixed plots at the first three points and at any remaining points where no trees 5.0 inches in diameter or larger were tallied. If no trees greater that 1.0 inch were tallied at a point, then seedlings were tallied. Several plot-level measurements relating to timber and non-timber assessment were also collected.

Tree data were used to estimate volumes, basal area, number of trees, and other per-acre variables. Ownership information was obtained for each measurement plot using tax records and other sources. Per acre estimates were expanded using county-level factors derived as part of the forest area determination. Thus, estimates at the county level may not match exactly with known totals for a particular variable.

In order to achieve greater compatibility among Forest Inventory and Analysis units, a modified tree classification system has been in effect since the 1988 inventory of Arkansas. Tree grade 5 is used to designate trees capable of producing at least one 12-foot log or two 8-foot logs in the saw-log portion, but not capable of producing a gradable 12-foot log in the butt 16-foot section. These trees - formerly classed as rough or rotten - are now included in growing stock. Any comparisons with previous estimates of growing stock are based on data that has been reprocessed to account for the change in definition. Because of the revised definition, and to better assess changes in whole-forest conditions; analysis of trends in inventory volume, growth, removals, and mortality will focus on live trees.

SAMPLING ERROR

The sampling methods were designed to achieve suitable sampling errors for estimates of area and volume at the State level. Sampling error increases as the area or volume considered decreases. The sampling errors presented in

Table I—*Sampling errors*[1] *for timberland, live trees, growing stock, and sawtimber, West-Central Alabama Counties, 1990*

County	Timberland	Live trees			Growing stock			Sawtimber
		Volume	Growth	Removals	Volume	Growth	Removals	volume
	Percent							
Bibb	1.7	8.7	13.2	22.6	8.9	13.0	22.7	11.4
Fayette	2.0	12.8	10.6	25.6	13.0	11.4	25.9	16.4
Greene	2.9	10.5	14.2	33.8	10.9	16.2	34.6	12.9
Hale	1.9	11.2	15.5	30.0	11.3	15.8	30.4	12.8
Lamar	2.3	11.1	19.9	28.5	11.4	17.2	28.4	13.7
Marion	2.6	11.2	12.2	24.5	11.4	12.0	25.1	17.5
Perry	2.3	12.9	15.0	25.1	12.9	14.9	25.6	17.2
Pickens	1.8	8.6	12.5	23.1	8.8	11.5	23.4	11.7
Tuscaloosa	1.7	7.1	9.4	15.6	7.3	9.9	15.8	9.2
All counties	0.7	3.5	4.6	8.0	3.6	4.6	8.2	4.6

[1] By random-sampling formula.

table I, equal to one standard deviation for the sample data, may be used to compute confidence intervals for population estimates. For example, at the 95 percent confidence level, the confidence interval for live-tree volume (in million cubic feet) is:

$$3{,}871.1 \pm 1.96(0.035 \times 3{,}871.1) = 3{,}871.1 \pm 265.6$$

where 1.96 is the number of standard deviations. This confidence interval indicates a 0.95 probability that the range, 3,605.5 to 4,136.7 million cubic feet, will cover the true live-tree inventory volume.

The results are reported for individual counties so that users may combine counties as desired. It is not recommended that individual county data be used in isolation. The user should combine data for as many counties as possible. Sampling error for a combination of counties may be estimated using the following formula:

$$SE_g = \frac{SE_t \sqrt{X_t}}{\sqrt{X_g}}$$

where:

SE = standard error of estimate (expressed as a percent)
X = variable of interest (area or volume)
g = group of counties to be combined
t = total for the unit.

For example, the estimate of sampling error for live-tree volume in Bibb, Greene, Hale, Perry, Pickens, and Tuscaloosa counties is 4.1 percent. The 95 percent confidence interval for live-tree volume is 2,860.0 ± 229.8 million cubic feet.

RESULTS

Area

The physiography of West-Central Alabama is relatively homogeneous, consisting of rolling hills of the East Gulf Coastal Plain. The region's eastern boundary aligns roughly with the Fall Line. The portion of the region to the east of the Fall Line contains more mountainous terrain. Forests cover 3.4 million acres or 77 percent of the land area. All of the forest land is classified as timberland capable of producing industrial wood products. The area of timberland increased slightly, by 3 percent.

Nearly all of the timberland is privately owned (95 percent). Nonindustrial private owners control 68 percent of the region's timberland, or 2.3 million acres. Most of the nonindustrial private timberland is owned by miscellaneous individuals (66 percent). Nonindustrial private timberland increased by 7 percent due to an increase in the area owned by miscellaneous individuals. Forest industry owns 28 percent of the timberland. The area of forest industry timberland is about the same as in 1982. Public timberland is 5 percent of the region total. Over three-fourths of the public timberland is in the Oakmulgee District of the Talladega National Forest, located southeast of Tuscaloosa.

The region's forest is made up of pine (32 percent), oak-pine (21 percent), and hardwood (47 percent) stands. Forest type is based on the stocking of dominant and codominant trees. Pine forest types include stands where at least half of the stocking is contributed by pines. Loblolly-shortleaf is the predominate pine forest type, accounting for 97 percent of the pine-type timberland. The total area of pine stands is 1.1 million acres, a minor increase of 4 percent; however, there was a large increase in the area of planted pine stands (including direct-seeded stands). The area of planted pine stands more than doubled, and now totals 631.5 thousand acres. Currently, half of the area of nonindustrial private pine stands originated from planting or direct seeding, compared to 76 percent of forest industry's pine stands. There is an additional 181.7 thousand acres with evidence of planting or direct seeding that are classified as oak-pine and hardwood forest types as a result of hardwood stocking. The oak-pine forest type, defined as forests dominated by hardwoods but at least 25 percent stocked with pine, decreased by 4 percent. Hardwood stands include the oak-hickory (70 percent of the hardwood forest) and oak-gum-cypress (30 percent) forest types. The area of hardwood forest types increased by 5 percent. The oak-hickory forest type increased by 9 percent. The oak-gum-cypress type decreased by 4 percent.

Inventory

The volume of live trees decreased by 7 percent, totaling 3.9 billion cubic feet. (This compares with a 25-percent increase that took place between 1972 and 1982.) A 2 percent increase in hardwood live-tree volume was offset by an 18 percent decrease in softwood live-tree volume. The volume of live trees includes the merchantable sound-wood volume of growing-stock trees, rough trees, and rotten trees. The growing-stock component of live-tree volume - the volume of trees with good management potential - comprises 94 percent of the live-tree volume.

The volume of live-trees is 58 percent hardwood and 42 percent softwood. The most abundant hardwood species are red oak (27 percent of the hardwood volume), white oak (15 percent), sweetgum (16 percent), gums (10 percent), yellow poplar (7 percent), and hickory (7 percent). The softwood inventory is dominated by loblolly pine (70 percent) and shortleaf pine (15 percent).

Shifts in the distribution of live-tree volume by diameter class clarify the decrease that occurred in total inventory volume. For hardwoods, the trend of increases across all diameter classes, which took place between 1972 and 1982, changed between 1982 and 1990. With the exception of the 10-inch class, volumes decreased in the 6- through 12-inch classes. Increases in the 14-inch and larger classes counteracted the decreases in smaller classes. The result was that hardwood inventory volume increased, but at a slower rate than between 1972 and 1982 (a 2-percent increase compared to a 29-percent increase). The most significant factor causing the decrease in overall volume was the very

Table II—*Components of annual change in the volume of live trees by inventory period and species group, West-Central Alabama Counties, 1990*

Inventory period and species group	Gross growth		
	Net growth	Mortality	Removals
	Million cubic feet		
1972 to 1981:			
Softwoods	109.7	28.2	101.9
Hardwoods	78.0	26.6	51.5
Total	187.7	54.8	153.4
1982 to 1989:			
Softwoods	95.6	24.2	136.6
Hardwoods	94.5	32.4	84.3
Total	190.1	56.6	220.9

sharp declines in softwood volume that occurred in all but the 16-inch class. This was a major reversal of the shifts that took place between 1972 and 1982, when large increases were apparent in the 8- through 14-inch classes.

Components of Change

Changes in the volume of live trees depend on three components: gross growth, mortality, and removals. Annual estimates of change are based on the period from the year of the previous inventory through the year prior to the present inventory. Gross growth of live trees was 246.7 million cubic feet for the period prior to 1990, remaining about the same as for the period prior to 1982 (table II). Net growth - equal to gross growth minus mortality - also remained level. Net growth was split equally between hardwoods and softwoods. The net growth of hardwoods increased by 21 percent. The net growth of softwoods decreased by 13 percent.

Removals of live trees, 220.9 million cubic feet, was 44 percent higher than for the period prior to 1982. Softwood removals were 62 percent of total removals and increased by 34 percent. Hardwood removals increased by 64 percent.

The ratio of net growth-to-removals is one measure of a forest's capacity to expand in volume. A ratio less than 1.0:1.0 usually indicates decreases in inventory volume. For the current inventory period, the growth-to-removals ratio was 0.9:1.0; decreasing from 1.2:1.0 since the previous inventory period. The ratio was 1.1:1.0 for hardwoods and 0.7:1.0 for softwoods.

CONCLUSIONS

The forests of West-Central Alabama have been heavily impacted by forest management activity. A high demand for the region's timber has accelerated the cutting of both softwoods and hardwoods. A shift from natural stand management to plantation management began in the 1970's and has intensified during the 1980's. The trend is evident on both forest industry and nonindustrial private timberland. The softwood growth decrease could be relatively short-lived. Ingrowth from the extensive area of young pine stands will provide a boost to softwood growth as these stands grow to merchantable size. A narrowing of the margin between hardwood growth and removals signals a need for close monitoring of the hardwood resource in the future. The outlook for timber-related resources will depend on future harvest levels, the adequacy of regeneration following harvest, and maintenance of the intensified management level.

DEFINITION OF TERMS

Average net annual growth.—Average net annual volume increase for the inventory period.

Average annual mortality.—Average annual sound-wood volume of trees dying from natural causes.

Average annual removals.—Average net annual volume of trees removed from the inventory by harvesting, cultural operations (such as timber-stand improvement), land clearing, or changes in land use.

Commercial species.—Tree species which normally develop into trees suitable for industrial wood products.

Forest land.—Land at least 16.7 percent stocked by forest trees of any size, or formerly having such tree cover, and not currently developed for nonforest use.

Forest type.—A classification of forest land based upon the species forming a plurality of live-tree stocking.

Growing-stock trees.—Live trees of commercial species. Rough and rotten trees are excluded.

Growing-stock volume.—The cubic-foot volume of sound wood in growing-stock trees at least 5.0 inches in diameter at breast height, from a 1-foot stump to a minimum 4.0-inch top diameter outside bark of the central stem, or to the point where the central stem breaks into limbs.

Live trees.—Commercial and noncommercial tree species of sapling size or larger.

Live-tree volume.—The cubic-foot volume of sound wood in live trees at least 5.0 inches in diameter at breast height, from a 1-foot stump to a minimum 4.0-inch top diameter outside bark of the central stem, or to the point where the central stem breaks into limbs.

Natural stands.—Stands with no evidence of artificial regeneration. This includes those established by seed tree regeneration methods.

Noncommercial species.—Tree species of typically small size, poor form, or inferior quality which normally do not develop into trees suitable for industrial wood products.

Planted stands.—Stands with evidence of planting or direct seeding.

Poletimber trees.—Live trees at least 5.0 inches in diameter at breast height, but smaller than sawtimber size.

Reserved timberland.—Productive public forest land withdrawn from timber utilization through statute or administrative regulations.

Rotten trees.—Live trees of commercial species that do not contain at least one 12-foot log or two 8-foot logs in the saw-log portion, now or prospectively, primarily because of rot.

Rough trees.—Live trees of commercial species that do not contain at least one 12-foot log or two 8-foot logs in the saw-log portion, now or prospectively, primarily because of roughness or poor form. Also included are live trees of noncommercial species.

Saplings.—Live trees at least 1.0 inches but less than 5.0 inches in diameter at breast height.

Sawtimber trees.—Live trees that contain at least one 12-foot log or two 8-foot logs in the saw-log portion, and meet regional specifications for freedom from defect. Softwoods must be at least 9.0 inches in diameter at breast height and hardwoods at least 11.0 inches in diameter at breast height.

Sawtimber volume.—Sound-wood volume of the saw-log portion of growing-stock sawtimber trees in board feet, International 1/4-inch rule and in cubic feet.

Seedlings.—Live trees less than 1.0 inch in diameter at breast height and greater than one foot tall for hardwoods, greater than six inches tall for softwoods, and greater than one-half inch in diameter at ground level for longleaf pine.

Select red oaks.—A classification of several red oak species composed of: cherrybark, Shumard, and northern red oaks.

Select white oaks.—A classification of several white oak species composed of: white, swamp chestnut, swamp white, chinkapin, Durand, and bur oaks.

Site class.—A classification of forest land in terms of inherent capacity to grow crops of industrial wood.

Stand-size class.—A classification of forest land based on the diameter class of live trees on the sampled area; that is, sawtimber, poletimber, or sapling and seedling.

Timberland.—Forest land that is producing, or is capable of producing, crops of industrial wood and not withdrawn from timber utilization. Timberland is synonymous with "commercial forest land" in prior reports.

Tree grade.—A classification of the volume of the saw-log portion of sawtimber trees, based on: 1) the log grade of the butt log, or 2) ability to produce at least one 12-foot or two 8-foot logs in the upper-section of the saw-log portion.

Woodland.—Forest land incapable of yielding crops of industrial wood because of adverse site conditions.

CORE TABLES 1-25

Table 1 –*Area by county and land class , West-Central Alabama Counties, 1990*

County	All land[1]	Forest land				Nonforest land
		Total	Timberland[2]	Woodland[3]	Reserved timberland	
	Thousand acres					
Bibb	400.0	346.5	345.9	...	0.6	53.5
Fayette	403.0	337.9	337.9	...	...	65.1
Greene	403.6	274.1	274.1	...	...	129.5
Hale	422.9	252.4	252.4	...	...	170.4
Lamar	387.2	326.0	326.0	...	...	61.2
Marion	475.8	373.7	373.7	...	...	102.1
Perry	459.8	324.2	324.2	...	...	135.6
Pickens	569.4	464.1	464.1	...	...	105.3
Tuscaloosa	855.2	659.1	659.1	...	...	196.1
All counties	4376.8	3358.1	3357.5	...	0.6	1018.7

[1] From U.S. Bureau of the Census.

[2] Forest land (formerly termed commercial forest land) that is producing or capable of producing at least 20 cubic feet of industrial wood per acre per year. Includes areas which may be inaccessible or inoperable by current standards. Excludes reserved timberland.

[3] Forest land incapable of producing 20 cubic feet of industrial wood per acre per year under natural conditions because of adverse site conditions.

Table 2 –*Area of timberland by county and ownership class, West -Central Alabama Counties, 1990*

County	All ownerships	National forest	Misc. federal	State	County and municipal	Forest industry[1]	Farmer	Corporate[2]	Individual[2]
	Thousand acres								
Bibb	345.9	61.4	...	...	...	112.6	41.5	11.9	118.5
Fayette	337.9	...	...	12.3	...	73.7	92.2	12.3	147.4
Greene	274.1	...	5.8	...	...	58.3	134.2	11.7	64.2
Hale	252.4	26.4	...	...	...	56.5	35.3	...	134.2
Lamar	326.0	...	...	6.5	...	58.7	39.1	6.5	215.1
Marion	373.7	...	...	...	6.1	110.3	42.9	24.5	189.9
Perry	324.2	29.9	...	...	...	120.1	42.0	12.0	120.1
Pickens	464.1	...	...	...	...	158.6	76.4	5.9	223.2
Tuscaloosa	659.1	6.1	...	5.7	...	181.7	85.2	107.9	272.6
All counties	3357.5	123.9	5.8	24.5	6.1	930.6	588.7	192.6	1485.3

[1] Includes land leased to forest industry.

[2] Indian land will be classed as corporate or individual as defined by the Bureau of Indian Affairs.

Table 3—*Area of timberland by county and forest type group, West-Central Alabama Counties, 1990*

County	Total	Forest type group: Longleaf-slash pine: Planted	Longleaf-slash pine: Natural	Loblolly-shortleaf pine: Planted	Loblolly-shortleaf pine: Natural	Oak-pine	Oak-hickory	Oak-gum-cypress
	Thousand acres							
Bibb	345.9	...	11.4	89.8	49.2	75.2	112.1	8.2
Fayette	337.9	...	...	36.9	67.6	61.4	129.0	43.0
Greene	274.1	...	...	35.0	29.2	70.0	52.5	87.5
Hale	252.4	2.6	...	56.5	19.4	52.9	52.1	68.8
Lamar	326.0	...	...	45.6	13.0	91.3	91.3	84.8
Marion	373.7	...	...	79.6	49.0	49.0	189.9	6.1
Perry	324.2	6.0	6.9	128.4	21.2	58.7	61.0	42.0
Pickens	464.1	...	...	99.9	64.6	82.2	158.6	58.7
Tuscaloosa	659.1	...	2.5	51.1	114.8	160.2	251.1	79.5
All counties	3357.5	8.6	20.7	622.8	428.0	701.0	1097.6	478.7

Table 4—*Area of timberland by county and stand-size class, West-Central Alabama Counties, 1990*

County	All classes	Stand-size class: Sawtimber	Poletimber	Sapling-seedling
	Thousand acres			
Bibb	345.9	107.5	108.5	129.9
Fayette	337.9	92.2	92.2	153.6
Greene	274.1	134.2	46.7	93.3
Hale	252.4	101.5	59.1	91.8
Lamar	326.0	97.8	117.3	110.8
Marion	373.7	85.8	128.7	159.3
Perry	324.2	85.9	105.3	133.0
Pickens	464.1	229.1	111.6	123.4
Tuscaloosa	659.1	271.8	165.9	221.5
All counties	3357.5	1205.6	935.3	1216.6

Table 5—*Area of timberland by county and site class, West-Central Alabama Counties, 1990*

County	All classes	Site class (cubic feet/acre/year): > 165	120-165	85-120	50-85	< 50
	Thousand acres					
Bibb	345.9	35.1	139.0	67.0	96.6	8.2
Fayette	337.9	24.6	61.4	92.2	141.3	18.4
Greene	274.1	58.3	116.7	75.8	23.3	...
Hale	252.4	38.0	64.4	106.8	40.6	2.6
Lamar	326.0	...	71.7	149.9	91.3	13.0
Marion	373.7	6.1	36.8	177.7	134.8	18.4
Perry	324.2	36.0	100.7	137.6	49.8	...
Pickens	464.1	52.9	135.1	146.9	129.2	...
Tuscaloosa	659.1	69.4	189.8	238.5	143.2	18.3
All counties	3357.5	320.3	915.7	1192.4	850.2	79.0

Table 6—*Area of timberland by county and stocking classes of growing-stock trees, West-Central Alabama Counties, 1990*

County	All classes	Stocking class (percent)				
		>130	100-130	60-100	16.7-60	<16.7
	Thousand acres					
Bibb	345.9	26.0	98.9	180.9	40.1	...
Fayette	337.9	36.9	104.4	178.2	18.4	...
Greene	274.1	23.3	58.3	163.3	29.2	...
Hale	252.4	2.6	61.8	152.7	35.3	...
Lamar	326.0	6.5	71.7	189.1	58.7	...
Marion	373.7	6.1	104.1	232.8	30.6	...
Perry	324.2	6.0	88.7	187.5	36.0	6.0
Pickens	464.1	41.1	176.2	193.9	52.9	...
Tuscaloosa	659.1	39.7	188.6	362.6	68.1	...
All counties	3357.5	188.3	952.9	1840.9	369.4	6.0

Table 7—*Area of timberland by forest type and ownership class, West-Central Alabama Counties, 1990*

Forest type[1]	All ownerships	National forest	Other public	Forest industry	Forest industry-leased	Other private
	Thousand acres					
Longleaf-slash pine	29.4	23.4	...	...	...	6.0
Loblolly-shortleaf pine	1050.9	38.5	...	379.6	43.1	589.7
Softwood total	1080.3	61.9	—	379.6	43.1	595.7
Oak-pine	701.0	32.3	12.6	137.9	30.3	487.8
Oak-hickory	1097.6	22.1	18.0	207.2	29.9	820.3
Oak-gum-cypress	478.7	7.6	5.8	90.5	12.0	362.8
Hardwood total	2277.2	62.0	36.4	435.6	72.2	1670.9
All types	3357.5	123.9	36.4	815.2	115.3	2266.6

[1] Forest type is based on species plurality of all live trees. Mixed types that in combination contain a majority of hardwood stodking are hardwood types.

Table 8—*Area of timberland by ownership class and stocking classes of growing-stock trees, West-Central Alabama Counties, 1990*

Ownership class	All classes	Stocking class (percent)				
		>130	100-130	60-100	16.7-6	<16.7
	Thousand acres					
National forest	123.9	4.9	27.0	87.4	4.5	...
Other public	36.4	...	...	30.3	6.1	...
Forest industry	815.2	69.7	322.8	367.4	55.3	...
Forest industry-leased	115.3	...	30.0	67.5	17.8	...
Other private	2266.6	113.7	573.0	1288.3	285.6	6.0
All ownerships	3357.5	188.3	952.9	1840.9	369.4	6.0

Table 9 – Area of timberland by forest type and stand-size class, West-Central Alabama Counties, 1990

Forest type[1]	All classes	Stand-size class		
		Sawtimber	Poletimber	Sapling-seedling
	Thousand acres			
Longleaf-slash pine	29.4	23.4	6.0	...
Loblolly-shortleaf pine	1050.9	323.5	333.3	394.1
Softwood total	1080.3	346.9	339.3	394.1
Oak-pine	701.0	289.5	144.6	266.9
Oak-hickory	1097.6	283.6	344.7	469.2
Oak-gum-cypress	478.7	285.7	106.6	86.4
Hardwood total	2277.2	858.8	595.9	822.5
All types	3357.5	1205.6	935.3	1216.6

[1] Forest type is based on species plurality of all live trees. Mixed types that in combination contain a majority of hardwood stocking are hardwood types.

Table 10 – Number of live trees on timberland by species and diameter class, West-Central Alabama Counties, 1990

Species	All classes	Diameter class (inches at breast height)										
		1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Longleaf-slash pine	15044	6652	3180	1370	1285	919	663	570	270	98	21	15	...
Shortleaf-loblolly pine	475143	181410	140964	70433	36695	20371	12303	6924	3386	1317	597	711	31
Other yellow pines	57121	25533	15649	5053	5909	3016	1231	594	99	27	...	9	...
Eastern hemlock	101	...	...	...	71	...	30	...	...	...	...	...	...
Cypress	524	...	...	133	...	85	120	21	67	25	31	22	19
Other softwoods	19136	14206	3802	283	623	132	...	49	17	13	11	...	...
Total softwoods	567068	227801	163595	77272	44583	24524	14347	8158	3839	1481	661	758	50
Select white oaks	83236	43040	19784	8737	4403	2782	1897	1256	610	294	164	251	19
Select red oaks	10662	4959	1098	1775	448	679	512	322	352	288	89	126	13
Other white oaks	60400	30784	14133	5607	3439	2721	1372	1107	525	382	161	147	23
Other red oaks	215460	133723	33894	15019	13065	8038	4208	3282	1725	1131	578	699	96
Hickory	129524	92381	18762	6855	4599	3096	1454	1063	718	302	144	150	...
Yellow birch	543	543	...	...	...	...	...	...	...	...	...	...	...
Hard maple	3189	2504	563	...	121	...	...	...	...	...	...	...	...
Soft maple	177341	147483	17449	7024	1877	2183	490	309	312	108	54	42	9
Beech	12726	8204	2699	707	458	45	146	91	98	100	48	89	40
Sweetgum	363904	244820	72219	23207	10719	6690	2825	1687	960	347	264	153	14
Tupelo-blackgum	133696	93872	16663	8088	5257	4158	2576	1687	677	284	185	216	33
Ash	17465	10067	4236	1544	468	335	212	259	146	138	30	32	...
Basswood	590	562	...	...	...	...	28	...	...	...	...	...	...
Yellow-poplar	38308	21950	6402	3000	1975	1174	1338	1076	565	378	219	220	12
Other hardwoods	345477	262994	55992	14360	5288	2919	1473	1141	544	324	232	195	15
Total hardwoods	1592522	1097886	263894	95922	52118	34819	18531	13281	7232	4076	2169	2320	274
Noncommercial	213881	161317	30858	14034	4769	2107	476	189	107	25	...	...	...
All species	2373471	1487004	458347	187227	101470	61449	33354	21627	11178	5582	2830	3078	324

able 11 – *Number of growing-stock trees on timberland by species and diameter class, West-Central Alabama Counties, 1990*

Species	All classes	Diameter class (inches at breast height)											
		1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
ongleaf-slash pine	13767	5808	2758	1370	1285	919	652	570	270	98	21	15	...
ortleaf-loblolly pine	429086	151016	129953	67091	35794	20202	12174	6859	3372	1293	597	711	25
ther yellow pines	50828	21202	14087	4810	5856	2936	1206	594	99	27	...	9	...
astern hemlock	101	...	...	...	71	...	30	...	...	...	...	...	...
ypress	391	...	...	...	...	85	120	21	67	25	31	22	19
ther softwoods	17872	13558	3281	283	571	115	...	23	17	13	11	...	...
Total softwoods	512045	191585	150080	73554	43577	24257	14182	8067	3825	1457	661	758	44
lect white oaks	61262	27122	15184	7835	4063	2749	1870	1233	558	244	164	222	19
lect red oaks	9654	4425	1098	1392	448	679	500	322	303	277	89	110	11
ther white oaks	38814	14717	10696	4524	3239	2601	1107	936	422	351	118	91	13
ther red oaks	164856	97130	24483	13062	12105	7628	3735	2937	1584	1045	528	574	46
ickory	74866	45602	13647	5018	4335	2856	1283	949	718	231	123	104	...
ard maple	2599	1984	563	...	52	...	...	...	...	...	...	...	...
oft maple	97495	77021	11552	4988	1497	1570	306	220	201	67	33	30	9
eech	6387	3382	1640	541	458	...	90	69	53	76	29	47	...
veetgum	255909	161818	53582	18549	9909	6429	2503	1577	851	301	249	133	9
upelo-blackgum	72369	43165	9942	6130	4699	3860	1956	1467	627	215	109	180	17
sh	11577	7849	1211	1214	401	173	177	221	131	138	30	32	...
asswood	28	...	...	...	...	...	28	...	...	...	...	...	...
ellow-poplar	36163	20664	5864	2982	1975	1130	1264	1015	516	350	209	190	4
ther hardwoods	193923	143157	31402	9561	4314	2491	1160	849	380	284	152	163	12
Total hardwoods	1025902	648035	180863	75796	47495	32166	15980	11794	6346	3579	1832	1876	140
ll species	1537948	839619	330942	149350	91073	56424	30162	19861	10170	5035	2493	2634	183

Table 12 – *Volume of growing stock on timberland by species and diameter class, West-Central Alabama Counties, 1990*

Species	All classes	Diameter class (inches at breast height)									
		5.0-6.9	7.0-8.9	9.0 10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet										
Longleaf-slash pine	70.3	4.2	7.5	11.5	12.6	15.9	10.8	5.3	1.4	1.2	...
Shortleaf-loblolly pine	1356.6	139.8	211.9	246.5	242.4	198.0	137.1	68.2	40.6	68.1	3.9
Other yellow pines	139.2	16.0	41.4	37.4	22.9	15.8	3.1	1.5	...	1.0	...
Eastern hemlock	1.0	...	0.5	...	0.6	...	...	...	...	...	...
Cypress	15.5	...	...	1.7	2.5	0.5	2.0	1.2	1.7	2.2	3.7
Other softwoods	5.2	0.9	2.1	0.8	...	0.4	0.3	0.3	0.3	...	...
Total softwoods	1587.8	161.1	263.4	297.9	281.1	230.5	153.2	76.5	44.1	72.5	7.6
Select white oaks	191.3	18.1	23.9	29.3	34.4	30.4	18.9	10.3	8.1	16.3	1.6
Select red oaks	71.9	2.5	3.0	8.0	10.2	8.2	9.6	14.6	5.4	8.8	1.8
Other white oaks	128.9	9.9	18.8	24.9	17.0	19.1	13.0	14.2	5.1	5.5	1.4
Other red oaks	508.4	33.4	69.4	80.3	69.7	73.0	54.2	48.2	30.2	43.7	6.4
Hickory	156.5	12.3	22.5	27.6	23.0	22.0	23.6	11.6	7.0	6.9	...
Hard maple	0.3	...	0.3	...	...	...	...	...	...	...	...
Soft maple	60.0	13.8	8.0	16.7	4.5	4.6	5.6	2.7	1.3	2.0	1.0
Beech	15.4	1.1	2.0	...	1.4	1.4	1.2	3.3	1.4	3.5	...
Sweetgum	354.1	43.2	57.8	78.5	54.2	43.7	32.6	16.0	15.3	12.1	0.6
Tupelo-blackgum	208.3	18.2	29.6	48.7	35.4	35.1	19.5	6.6	4.6	9.1	1.5
Ash	30.7	2.4	2.4	1.5	3.7	6.2	4.1	6.1	1.9	2.5	...
Basswood	0.6	...	...	...	0.6	...	...	...	...	...	...
Yellow-poplar	153.5	7.0	11.9	13.3	24.6	29.5	19.5	17.0	13.1	16.9	0.6
Other hardwoods	153.0	21.7	22.6	24.3	20.2	19.8	12.1	11.2	7.9	11.2	2.0
Total hardwoods	2033.0	183.7	272.3	353.0	298.8	292.9	213.9	161.7	101.4	138.5	16.9
All species	3620.8	344.7	535.7	650.9	579.9	523.5	367.1	238.2	145.5	210.9	24.5

Table 13 — *Volume of growing stock in the saw-log portion of sawtimber[1] trees on timberland by species and diameter class, West-Central Alabama Counties, 1990*

Species	All classes	Diameter class (inches at breast height)							
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet								
Longleaf-slash pine	53.4	9.2	11.5	14.7	10.3	5.0	1.4	1.2	...
Shortleaf-loblolly pine	879.6	192.5	214.4	180.3	126.0	62.7	37.3	62.8	3.6
Other yellow pines	68.3	29.3	19.9	13.9	2.8	1.5	...	1.0	...
Eastern hemlock	0.5	...	0.5	...	...	...	...	...	...
Cypress	13.7	1.5	1.9	0.4	1.5	1.1	1.6	2.0	3.6
Other softwoods	1.8	0.7	...	0.3	0.2	0.3	0.2	...	...
Total softwoods	1017.2	233.2	248.3	209.7	140.8	70.6	40.5	66.9	7.2
Select white oaks	95.2	...	25.0	24.6	15.4	8.4	6.7	13.8	1.3
Select red oaks	49.8	...	7.7	6.8	8.5	12.7	4.6	7.9	1.7
Other white oaks	60.4	...	12.8	15.3	10.6	11.7	4.2	4.5	1.2
Other red oaks	266.3	...	50.5	59.5	46.9	41.3	25.8	37.0	5.3
Hickory	76.3	...	17.4	17.3	20.0	9.7	5.9	6.0	...
Soft maple	17.3	...	3.4	3.6	4.5	2.2	0.9	1.8	0.9
Beech	9.8	...	0.8	1.3	1.0	2.9	1.1	2.8	...
Sweetgum	140.4	...	38.8	35.0	28.2	13.7	13.4	10.7	0.5
Tupelo-blackgum	88.3	...	24.3	27.5	16.8	5.8	4.2	8.2	1.5
Ash	21.0	...	2.8	5.2	3.7	5.2	1.9	2.3	...
Basswood	0.4	...	0.4	...	...	...	...	...	...
Yellow-poplar	102.0	...	17.2	24.5	17.1	15.1	11.8	15.6	0.6
Other hardwoods	69.3	...	14.9	15.9	10.1	9.6	6.9	9.9	2.0
Total hardwoods	996.4	...	215.9	236.3	182.9	138.3	87.4	120.5	15.0
All species	2013.6	233.2	464.2	446.0	323.7	208.9	128.0	187.4	22.1

[1] That part of the bole of sawtimber trees between a 1-foot stump and saw-log top.

Table 14 — *Volume of sawtimber on timberland by species and diameter class, West-Central Alabama Counties, 1990*

Species	All classes	Diameter class (inches at breast height)							
		9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Longleaf-slash pine	317.7	50.4	66.4	89.6	62.3	32.6	8.9	7.5	...
Shortleaf-loblolly pine	5278.0	1030.5	1256.0	1100.2	798.4	403.6	242.8	421.7	24.8
Other yellow pines	376.0	154.6	109.4	80.7	15.4	9.2	...	6.7	...
Eastern hemlock	2.9	...	2.9	...	...	...	...	...	...
Cypress	75.6	8.3	10.0	1.8	9.1	6.1	9.0	11.0	20.4
Other softwoods	8.9	3.4	...	1.6	1.1	1.5	1.3	...	...
Total softwoods	6059.2	1247.2	1444.7	1273.9	886.3	453.0	262.0	447.0	45.2
Select white oaks	550.8	...	136.4	139.7	93.6	49.7	40.0	85.8	5.7
Select red oaks	296.1	...	44.3	37.7	48.1	80.1	27.8	47.7	10.5
Other white oaks	354.2	...	69.4	84.9	63.2	73.8	25.4	29.0	8.4
Other red oaks	1578.1	...	283.8	339.8	277.3	252.5	161.7	231.5	31.4
Hickory	459.7	...	96.9	103.2	121.8	63.8	37.1	36.9	...
Soft maple	96.7	...	19.2	19.9	26.2	12.6	4.9	9.7	4.2
Beech	59.2	...	3.9	6.8	5.7	18.5	6.0	18.3	...
Sweetgum	833.5	...	220.9	204.1	168.3	86.6	82.8	67.6	3.1
Tupelo-blackgum	450.8	...	120.2	144.3	86.1	29.0	23.3	41.3	6.6
Ash	126.5	...	16.2	31.5	20.5	33.3	11.3	13.6	...
Basswood	2.1	...	2.1	...	...	...	...	...	...
Yellow-poplar	601.3	...	97.4	146.4	100.7	89.3	71.2	92.4	3.8
Other hardwoods	403.9	...	83.7	86.6	58.1	57.4	42.3	62.3	13.5
Total hardwoods	5812.9	...	1194.3	1344.9	1069.7	846.6	533.8	736.2	87.3
All species	11872.1	1247.2	2639.0	2618.8	1956.0	1299.6	795.8	1183.2	132.5

Table 15 – *Volume of growing stock and sawtimber on timberland by county and species group, West-Central Alabama Counties, 1990*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Bibb	330.2	36.4	139.3	0.4	59.7	94.3	1152.2	84.8	617.2	1.6	156.5	292.1
Fayette	291.9	4.0	104.8	0.3	88.0	94.7	786.0	...	292.4	1.4	213.2	279.0
Greene	353.5	35.8	83.1	6.0	108.0	120.6	1425.5	167.3	418.6	27.5	337.5	474.6
Hale	235.2	26.4	72.4	0.1	57.5	78.7	743.5	54.3	330.1	...	118.5	240.6
Lamar	357.2	16.8	77.2	6.4	136.5	120.3	974.8	40.2	274.9	29.1	270.8	359.8
Marion	289.1	46.0	63.8	1.2	39.9	138.2	741.8	135.7	203.2	2.9	101.9	298.1
Perry	278.3	74.5	66.0	4.8	67.5	65.5	909.0	168.7	315.6	21.2	191.3	212.3
Pickens	697.9	158.4	207.7	2.2	164.7	164.9	2522.4	606.3	949.5	3.8	468.4	494.4
Tuscaloosa	787.6	50.0	303.4	0.3	195.2	238.7	2616.7	143.7	1169.3	...	515.2	788.5
All counties	3620.8	448.4	1117.8	21.7	917.1	1115.9	11872.1	1401.0	4570.8	87.4	2373.3	3439.5

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 16 – *Volume of timber on timberland by class of timber and species group, West-Central Alabama Counties, 1990*

		Softwood			Hardwood	
		Pine				
Class of timber	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet					
Sawtimber trees:						
Saw-log portion	2013.6	241.7	759.5	16.0	414.8	581.6
Upper-stem portion	373.9	40.2	103.8	2.2	96.0	131.7
Total	2387.4	281.8	863.4	18.2	510.8	713.3
Poletimber trees	1233.4	166.5	254.4	3.5	406.3	402.6
All growing-stock trees	3620.8	448.4	1117.8	21.7	917.1	1115.9
Rough trees:						
Sawtimber size	88.3	1.2	4.7	0.1	31.3	51.1
Poletimber size	124.7	2.9	7.2	0.5	31.0	83.1
Total	212.9	4.1	11.8	0.5	62.3	134.2
Rotten trees:						
Sawtimber size	33.6	...	...	0.3	18.5	14.8
Poletimber size	3.8	...	0.3	...	2.3	1.2
Total	37.4	...	0.3	0.3	20.8	16.0
Salvable dead trees:						
Sawtimber size	15.0	3.6	7.5	0.3	1.0	2.5
Poletimber size	6.9	1.1	3.1	0.8	0.6	1.3
Total	21.9	4.7	10.6	1.1	1.7	3.8
All classes	3893.0	457.1	1140.5	23.6	1001.9	1269.8

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 17 – *Volume of live trees and growing stock on timberland by ownership class and species group, West-Central Alabama Counties, 1990*

	Live trees						Growing stock					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet											
National forest	206.2	7.9	108.6	0.2	48.5	41.0	194.6	7.8	108.1	0.1	46.0	32.6
Other public	36.0	...	8.7	0.3	11.5	15.6	33.1	...	8.7	...	10.6	13.8
Forest industry	822.0	218.3	203.0	3.6	181.7	215.4	780.7	215.6	201.2	3.6	169.1	191.1
Forest industry-leased	119.6	29.5	35.4	...	20.3	34.4	110.1	29.5	34.5	...	17.4	28.7
Other private	2687.2	196.8	774.2	18.4	738.2	959.7	2502.3	195.5	765.2	17.9	674.1	849.7
All ownerships	3871.1	452.4	1129.9	22.5	1000.2	1266.0	3620.8	448.4	1117.8	21.7	917.1	1115.9

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 18 – *Average net annual growth of growing stock and sawtimber on timberland by county and species group, West-Central Alabama Counties, 1990*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Bibb	16.9	1.5	8.8	...	2.7	4.0	65.9	2.5	43.5	0.2	7.3	12.4
Fayette	15.8	0.9	4.4	...	5.0	5.5	50.0	1.8	16.7	...	13.8	17.7
Greene	16.4	2.1	3.2	0.5	4.5	6.2	63.4	11.2	14.6	1.7	11.6	24.3
Hale	11.9	1.5	3.8	...	2.7	3.9	46.2	1.3	21.5	...	7.9	15.5
Lamar	18.1	1.2	5.1	0.1	5.6	6.0	61.4	5.2	21.8	1.6	12.3	20.5
Marion	18.1	2.1	5.9	...	2.1	8.0	66.1	12.2	26.7	0.1	3.5	23.6
Perry	20.2	7.0	4.8	0.3	3.9	4.2	73.5	15.8	23.7	1.0	15.3	17.7
Pickens	38.1	8.8	11.5	...	8.1	9.7	161.3	36.5	65.0	-0.1	31.0	28.8
Tuscaloosa	35.3	5.9	17.2	-0.3	4.7	7.8	171.4	21.0	93.7	-0.3	18.5	38.6
All counties	191.0	31.2	64.7	0.6	39.2	55.3	759.1	107.5	327.0	4.2	121.2	199.1

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 19 – *Average annual removals of growing stock and sawtimber on timberland by county and species group, West-Central Alabama Counties, 1990*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Bibb	18.5	...	13.1	...	2.8	2.6	65.7	...	57.6	...	2.0	6.1
Fayette	25.7	2.6	7.7	...	7.5	7.8	84.2	7.6	34.3	...	19.4	22.8
Greene	11.5	3.1	5.4	...	1.2	1.9	51.7	15.1	25.2	...	4.2	7.1
Hale	18.5	...	10.0	...	5.3	3.2	70.8	...	51.0	...	11.2	8.5
Lamar	13.3	1.2	6.0	...	2.9	3.3	37.5	2.4	18.8	...	7.4	8.9
Marion	18.7	1.9	11.4	...	0.5	4.9	67.2	7.3	44.1	...	1.4	14.5
Perry	21.8	0.9	13.6	...	3.2	4.2	81.5	2.1	62.8	...	4.0	12.5
Pickens	27.4	5.0	13.0	...	4.0	5.4	87.3	9.2	55.3	...	9.9	12.8
Tuscaloosa	59.7	7.7	33.0	...	5.7	13.3	219.1	16.9	134.8	...	19.6	47.8
All counties	215.3	22.3	113.2	...	33.2	46.5	764.9	60.7	484.0	...	79.1	141.1

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 20—*Average net annual growth and average annual removals of growing stock on timberland by species, West-Central Alabama Counties, 1990*

Species	Growth	Removals
	- - - - *Million cubic feet* - - - -	
Yellow pines	95.9	135.6
Other softwoods	0.6	...
Total softwoods	96.5	135.6
Select white-red oaks	12.6	8.8
Other white-red oaks	32.8	28.5
Hickory	6.3	7.0
Sweetgum	15.0	16.8
Ash-walnut-black cherry	2.3	1.1
Yellow-poplar	8.0	3.8
Other hardwoods	17.4	13.7
Total hardwoods	94.5	79.7
All species	191.0	215.3

Table 21—*Average net annual growth and average annual removals of sawtimber on timberland by species, West-Central Alabama Counties, 1990*

Species	Growth	Removals
	- - - - - - *Million board feet* - - - - -	
Yellow pines	434.5	544.7
Other softwoods	4.2	...
Total softwoods	438.8	544.7
Select white-red oaks	52.0	29.5
Other white-red oaks	118.5	88.5
Hickory	18.2	18.8
Sweetgum	38.8	38.8
Ash-walnut-black cherry	7.8	2.3
Yellow-poplar	39.6	14.3
Other hardwoods	45.3	28.1
Total hardwoods	320.3	220.3
All species	759.1	764.9

Table 22—*Average annual mortality of growing stock and sawtimber on timberland by species, West-Central Alabama Counties, 1990*

Species	Growing stock	Sawtimber
	- - -*Million cubic feet* - - -	*Million board feet* - - -
Yellow pines	21.3	63.9
Other softwoods	0.3	0.3
Total softwoods	21.6	64.2
Select white-red oaks	1.9	5.0
Other white-red oaks	7.3	22.4
Hickory	1.6	5.2
Sweetgum	6.2	13.3
Ash-walnut-black cherry	0.4	0.7
Yellow-poplar	1.7	4.9
Other hardwoods	4.2	8.3
Total hardwoods	23.4	59.8
All species	45.0	124.1

Table 23 – *Average net annual growth and average annual removals of growing stock on timberland by ownership class and species group, West-Central Alabama Counties, 1990*

	Growth						Removals					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet											
National forest	6.4	0.6	3.1	...	1.6	1.1	5.4	...	5.0	...	0.3	0.1
Other public	1.2	...	0.2	...	0.4	0.5	2.3	...	2.1	...	...	0.2
Forest industry	48.1	15.9	15.2	...	7.8	9.2	74.4	7.3	42.3	...	8.8	16.0
Forest industry-leased	6.1	1.7	1.2	...	1.1	2.1	10.2	1.8	4.5	...	1.5	2.3
Other private	129.2	13.0	45.0	0.6	28.3	42.3	122.9	13.2	59.3	...	22.5	27.9
All ownerships	191.0	31.2	64.7	0.6	39.2	55.3	215.3	22.3	113.2	...	33.2	46.5

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 24 – *Average net annual growth and average annual removals of sawtimber on timberland by ownership class and species group, West-Central Alabama Counties, 1990*

	Growth						Removals					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million board feet											
National forest	30.4	0.5	18.2	...	7.3	4.4	25.5	...	24.3	...	0.9	0.3
Other public	3.4	...	1.8	...	1.3	0.3	10.6	...	10.6	...	...	..
Forest industry	195.1	52.1	71.7	0.1	30.6	40.7	281.1	15.6	188.1	...	20.9	56.5
Forest industry-leased	21.7	3.4	5.0	...	4.7	8.6	32.0	3.0	22.5	...	2.2	4.4
Other private	508.5	51.5	230.3	4.1	77.3	145.2	415.7	42.0	238.5	...	55.2	80.0
All ownerships	759.1	107.5	327.0	4.2	121.2	199.1	764.9	60.7	484.0	...	79.1	141.1

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 25 – *Volume of sawtimber on timberland by species and tree grade, West-Central Alabama Counties, 1990*

Species	All grades	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
	Million board feet					
Yellow pines	5971.8	1596.9	1080.8	3196.9	...	97.2
Cypress	75.6	29.3	14.6	31.7	...	...
Redcedar	8.9	8.9	...	...	...	...
Other softwoods	2.9	...	...	2.9	...	...
Total softwoods	6059.2	1635.1	1095.4	3231.5	...	97.2
Select white-red oaks	846.9	150.4	199.1	321.0	141.8	34.6
Other white-red oaks	1932.3	155.4	294.9	696.5	650.0	135.5
Hickory	459.7	42.6	86.7	213.6	92.8	23.9
Sweetgum	833.5	98.2	156.9	430.9	108.6	38.8
Tupelo and blackgum	450.8	22.4	121.5	236.1	21.0	49.7
Ash-walnut-black cherry	128.5	18.0	29.6	60.9	13.2	6.8
Yellow-poplar	601.3	53.3	119.0	192.3	192.1	44.5
Other hardwoods	560.0	47.4	77.1	212.1	160.5	62.9
Total hardwoods	5812.9	587.8	1084.8	2363.5	1380.0	396.7
All species	11872.1	2222.9	2180.2	5594.9	1380.0	493.9

Supplemental Tables 26-43

Table 26 — *Area of timberland by stand age, forest type group and type of regeneration, West-Central Alabama Counties, 1990*

Stand age class	Pine		Oak-pine		Other hardwood types	
	Artificial	Natural	Artificial	Natural	Artificial	Natural
	Thousand acres					
1-10	275.2	25.0	64.0	26.4	47.6	73.9
11-20	119.5	18.1	11.7	...	...	5.9
21-30	80.6	5.7	5.7	...	...	...
31-40	65.8	41.5	11.5	5.9	...	...
41-50	11.7	7.1	...	...	5.8	5.7
>50	5.9	2.3	...	19.4	...	9.7
Mixed	72.7	349.0	23.6	532.8	11.8	1415.9
Total	631.5	448.8	116.5	584.5	65.2	1511.1

Table 27 — *Volume of softwood growing stock on timberland by forest type group, West-Central Alabama Counties, 1990*

County	Total	Forest type group						
		Longleaf-slash pine		Loblolly-shortleaf pine		Oak-pine	Oak-hickory	Oak-gum-cypress
		Planted	Natural	Planted	Natural			
	Million cubic feet							
Bibb	176.1	...	16.9	34.9	46.1	58.0	18.7	1.5
Fayette	109.1	...	...	4.0	73.1	19.0	12.4	0.6
Greene	124.9	...	...	20.8	45.8	35.6	15.2	7.5
Hale	99.0	2.5	...	23.9	18.4	42.0	7.0	5.2
Lamar	100.4	...	...	16.8	9.8	54.9	8.6	10.2
Marion	111.0	...	...	45.3	29.9	14.1	21.7	...
Perry	145.2	5.2	11.2	64.6	13.9	30.0	12.7	7.5
Pickens	368.3	...	...	154.2	105.5	70.3	36.8	1.5
Tuscaloosa	353.7	...	4.5	43.6	158.8	110.2	34.7	2.0
All counties	1587.8	7.7	32.6	408.1	501.4	434.1	167.9	36.1

Table 28 — *Volume of hardwood growing stock on timberland by forest type group, West-Central Alabama Counties, 1990*

County	Total	Forest type group						
		Longleaf-slash pine		Loblolly-shortleaf pine		Oak-pine	Oak-hickory	Oak-gum-cypress
		Planted	Natural	Planted	Natural			
	Million cubic feet							
Bibb	154.1	...	1.0	9.5	12.9	34.1	77.5	19.1
Fayette	182.7	...	...	1.8	14.0	23.3	99.0	44.7
Greene	228.7	...	...	3.8	9.6	30.4	56.6	128.3
Hale	136.2	...	...	6.2	2.9	24.9	20.0	82.3
Lamar	256.8	...	...	0.9	1.1	47.3	74.5	133.0
Marion	178.1	...	...	2.3	10.4	13.6	143.9	7.9
Perry	133.0	0.5	0.6	9.3	2.5	24.8	45.9	49.4
Pickens	329.6	...	...	24.2	23.9	56.4	113.7	111.3
Tuscaloosa	433.8	...	0.8	1.2	21.4	76.2	197.1	137.2
All counties	2033.0	0.5	2.4	59.1	98.8	331.0	828.0	713.2

Table 29 – *Volume of softwood growing stock in the saw-log portion of sawtimber trees on timberland by forest type group, West-Central Alabama Counties, 1990*

County	Total	Forest type group						
		Longleaf-slash pine		Loblolly-shortleaf pine		Oak-pine	Oak-hickory	Oak-gum-cypress
		Planted	Natural	Planted	Natural			
	Million cubic feet							
Bibb	117.9	...	13.8	15.4	31.0	43.8	12.4	1.5
Fayette	54.7	...	...	...	33.8	13.0	7.3	0.6
Greene	95.4	...	...	15.4	34.3	25.6	13.4	6.6
Hale	67.0	1.7	...	9.0	13.0	33.1	5.3	5.0
Lamar	60.0	...	...	7.4	3.1	35.6	4.8	9.0
Marion	59.5	...	...	22.4	17.2	8.3	11.6	...
Perry	86.0	2.9	8.4	23.4	8.6	24.7	10.9	7.0
Pickens	254.5	...	...	100.8	73.9	52.6	25.9	1.3
Tuscaloosa	222.4	...	3.4	22.0	92.4	78.0	24.7	1.8
All counties	1017.2	4.6	25.6	215.9	307.4	314.6	116.4	32.7

Table 30 – *Volume of hardwood growing stock in the saw-log portion of sawtimber trees on timberland by forest type group, West-Central Alabama Counties, 1990*

County	Total	Forest type group						
		Longleaf-slash pine		Loblolly-shortleaf pine		Oak-pine	Oak-hickory	Oak-gum-cypress
		Planted	Natural	Planted	Natural			
	Million cubic feet							
Bibb	76.6	...	0.1	5.5	4.9	18.4	34.9	12.8
Fayette	86.5	...	...	1.4	4.9	6.5	48.5	25.1
Greene	133.6	...	...	2.4	2.0	10.9	27.7	90.7
Hale	64.1	...	...	1.7	1.3	10.7	11.0	39.5
Lamar	113.6	...	...	0.8	0.5	25.2	29.7	57.4
Marion	66.9	...	...	1.2	3.0	2.8	57.2	2.7
Perry	69.2	...	0.2	1.9	0.4	13.7	23.0	29.9
Pickens	165.5	...	...	8.9	9.1	35.2	48.3	64.0
Tuscaloosa	220.4	...	0.4	0.5	6.5	35.2	100.5	77.2
All counties	996.4	...	0.7	24.2	32.8	158.6	380.9	399.2

Table 31 – *Volume of timber on timberland by county, class of timber and species group, West-Central Alabama Counties, 1990*

County	All classes	Growing stock		Rough		Rotten	
		Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
	Million cubic feet						
Bibb	359.7	176.1	154.1	2.5	22.1	...	5.0
Fayette	313.1	109.1	182.7	1.5	17.9	...	1.8
Greene	379.4	124.9	228.7	1.7	20.0	...	4.3
Hale	258.7	99.0	136.2	1.0	18.1	...	4.3
Lamar	385.8	100.4	256.8	1.6	23.3	0.6	3.1
Marion	312.1	111.0	178.1	1.4	17.9	...	3.7
Perry	296.0	145.2	133.0	0.8	13.6	...	3.4
Pickens	730.4	368.3	329.6	4.5	23.6	...	4.4
Tuscaloosa	835.8	353.7	433.8	1.6	39.9	...	6.8
All counties	3871.1	1587.8	2033.0	16.5	196.5	0.6	36.8

Table 32 —*Number of live trees on timberland by detailed species and diameter class, West-Central Alabama Counties, 1990*

Species	All classes	Diameter class (inches at breast height)											
		1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Longleaf pine	14668	6652	3180	1278	1076	868	663	547	270	98	21	15	...
Slash pine	376	...	...	92	210	51	...	23	...	...	...	...	...
Shortleaf pine	59912	23441	14169	8041	5819	4093	2345	1270	492	162	33	46	...
Loblolly pine	415231	157969	126795	62392	30877	16279	9958	5654	2894	1155	564	665	31
Virginia pine	57023	25533	15649	5053	5909	2981	1231	553	99	14	...	...	...
Spruce pine	98	...	...	...	...	35	...	41	...	13	...	9	...
Redcedar	19136	14206	3802	283	623	132	...	49	17	13	11	...	...
Hemlock-spruce	101	...	...	...	71	...	30	...	...	...	...	...	...
Cypress	524	...	...	133	...	85	120	21	67	25	31	22	19
Total softwoods	567068	227801	163595	77272	44583	24524	14347	8158	3839	1481	661	758	50
Select white oaks	83236	43040	19784	8737	4403	2782	1897	1256	610	294	164	251	19
Select red oaks	10662	4959	1098	1775	448	679	512	322	352	288	89	126	13
Other white oaks	60400	30784	14133	5607	3439	2721	1372	1107	525	382	161	147	23
Other red oaks	215460	133723	33894	15019	13065	8038	4208	3282	1725	1131	578	699	96
Sweet pecan	1295	1295	...	...	...	...	...	...	...	...	...	...	...
Water hickory	61	...	...	...	55	...	...	...	...	...	...	6	...
Other hickories	128168	91086	18762	6855	4545	3096	1454	1063	718	302	144	144	...
Persimmon	22162	17257	4050	748	86	...	...	22	...	...	...	...	...
Hard maple	3189	2504	563	...	121	...	...	...	...	...	...	...	...
Soft maple	175581	145822	17449	7024	1877	2110	490	309	296	108	45	42	9
Boxelder	1760	1661	...	...	...	73	...	...	16	...	9	...	...
Beech	12726	8204	2699	707	458	45	146	91	98	100	48	89	40
Sweetgum	363904	244820	72219	23207	10719	6690	2825	1687	960	347	264	153	14
Blackgum	112319	87574	12975	4279	2755	2047	1194	822	344	89	96	144	...
Other gums/tupelos	21377	6299	3689	3809	2502	2111	1382	865	332	196	89	71	33
White ash	3922	1640	1942	174	70	42	...	24	17	13	...	...	...
Other ashes	13544	8427	2294	1371	397	293	212	235	129	125	30	32	...
Sycamore	177	...	...	...	...	38	26	...	47	27	11	20	8
Basswood	590	562	...	...	...	...	28	...	...	...	...	...	...
Yellow-poplar	38308	21950	6402	3000	1975	1174	1338	1076	565	378	219	220	12
Magnolia	2002	1084	521	348	...	36	...	...	...	14	...	...	...
Sweetbay	17377	10650	539	2594	1590	964	481	284	154	78	34	5	3
Willow	560	...	...	...	273	180	...	107	...	...	...	...	...
Black cherry	34705	27579	5449	774	562	301	31	...	...	...	...	8	...
American elm	5325	4364	...	350	266	75	79	107	...	25	31	28	...
Other elms	29859	22008	5080	1428	661	204	313	125	29	...	11	...	...
River birch	5656	2253	1133	988	266	417	229	151	78	66	21	54	...
Other birches	543	543	...	...	...	...	...	...	...	...	...	...	...
Hackberry	5991	2719	535	666	602	499	195	305	170	114	102	80	4
Black locust	211	...	...	127	84	...	...	...	...	...	...	...	...
Other locusts	808	...	539	116	64	...	33	40	17	...	...	...	...
Sassafras	15318	12958	1161	1109	60	...	31	...	...	...	...	...	...
Dogwood	186253	147446	34020	4329	409	48	...	...	...	...	...	...	...
Holly	10774	9173	1345	56	87	113	...	...	...	...	...	...	...
Other commercial	8298	5502	1622	728	277	42	55	...	49	...	23	...	...
Total hardwoods	1592522	1097886	263894	95922	52118	34819	18531	13281	7232	4076	2169	2320	274
Noncommercial	213881	161317	30858	14034	4769	2107	476	189	107	25	...	...	...
All species	2373471	1487004	458347	187227	101470	61449	33354	21627	11178	5582	2830	3078	324

Table 33 – *Number of growing-stock trees on timberland by detailed species and diameter class, West-Central Alabama Counties, 1990*

Species	All classes	Diameter class (inches at breast height)									
		5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees										
Longleaf pine	4825	1278	1076	868	652	547	270	98	21	15	...
Slash pine	376	92	210	51	...	23	...	...	...	...	...
Shortleaf pine	21500	7593	5533	4051	2319	1270	492	162	33	46	...
Loblolly pine	126617	59498	30261	16151	9855	5589	2879	1130	564	665	25
Virginia pine	15441	4810	5856	2902	1206	553	99	14	...	...	...
Spruce pine	98	...	...	35	...	41	...	13	...	9	...
Redcedar	1033	283	571	115	...	23	17	13	11	...	...
Hemlock-spruce	101	...	71	...	30	...	...	...	...	...	...
Cypress	391	...	...	85	120	21	67	25	31	22	19
Total softwoods	170381	73554	43577	24257	14182	8067	3825	1457	661	758	44
Select white oaks	18956	7835	4063	2749	1870	1233	558	244	164	222	19
Select red oaks	4131	1392	448	679	500	322	303	277	89	110	11
Other white oaks	13402	4524	3239	2601	1107	936	422	351	118	91	13
Other red oaks	43243	13062	12105	7628	3735	2937	1584	1045	528	574	46
Other hickories	15618	5018	4335	2856	1283	949	718	231	123	104	...
Persimmon	661	614	25	...	...	22	...	...	...	...	...
Hard maple	52	...	52	...	...	...	...	...	...	...	...
Soft maple	8862	4988	1497	1535	306	220	185	67	24	30	9
Boxelder	61	...	...	35	...	...	16	...	9	...	...
Beech	1365	541	458	...	90	69	53	76	29	47	...
Sweetgum	40509	18549	9909	6429	2503	1577	851	301	249	133	9
Blackgum	9388	3091	2334	1828	891	690	310	63	63	116	...
Other gums/tupelos	9873	3039	2365	2032	1065	777	317	152	45	64	17
White ash	339	174	70	42	...	24	17	13	...	...	...
Other ashes	2178	1041	330	131	177	198	115	125	30	32	...
Sycamore	177	...	...	38	26	...	47	27	11	20	8
Basswood	28	...	...	...	28	...	...	...	...	...	...
Yellow-poplar	9635	2982	1975	1130	1264	1015	516	350	209	190	4
Magnolia	14	...	...	...	...	...	...	14	...	...	...
Sweetbay	4967	2192	1464	735	290	164	54	64	...	3	...
Willow	560	...	273	180	...	107	...	...	...	...	...
Black cherry	1501	606	562	301	31	...	...	...	...	...	...
American elm	621	263	126	75	53	40	...	25	20	20	...
Other elms	2218	1042	545	204	281	106	29	...	11	...	...
River birch	2226	988	266	417	229	151	62	54	21	39	...
Hackberry	2389	561	602	428	162	218	154	100	79	80	4
Black locust	211	127	84	...	...	...	...	...	...	...	...
Other locusts	153	...	64	...	33	40	17	...	...	...	...
Sassafras	841	841	...	...	...	...	...	...	...	...	...
Dogwood	1964	1782	181	...	...	...	...	...	...	...	...
Holly	229	56	60	113	...	...	...	...	...	...	...
Other commercial	631	488	60	...	55	...	17	...	11	...	...
Total hardwoods	197005	75796	47495	32166	15980	11794	6346	3579	1832	1876	140
All species	367386	149350	91073	56424	30162	19861	10170	5035	2493	2634	183

Table 34 —*Volume of growing-stock on timberland by detailed species and diameter class, West-Central Alabama Counties, 1990*

Species	All classes	Diameter class (inches at breast height) 5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet										
Longleaf pine	67.8	4.0	6.4	10.8	12.6	15.3	10.8	5.3	1.4	1.2	...
Slash pine	2.6	0.2	1.1	0.6	...	0.6	...	...	...	...	...
Shortleaf pine	241.9	22.6	38.9	53.1	48.6	42.0	22.1	8.5	2.3	3.9	...
Loblolly pine	1114.7	117.3	173.0	193.4	193.8	156.1	115.0	59.7	38.4	64.2	3.9
Virginia pine	135.3	16.0	41.4	37.1	22.9	14.2	3.1	0.6	...	...	...
Spruce pine	3.9	...	...	0.4	...	1.5	...	0.9	...	1.0	...
Redcedar	5.2	0.9	2.1	0.8	...	0.4	0.3	0.3	0.3	...	...
Hemlock-spruce	1.0	...	0.5	...	0.6	...	...	...	...	...	...
Cypress	15.5	...	...	1.7	2.5	0.5	2.0	1.2	1.7	2.2	3.7
Total softwoods	1587.8	161.1	263.4	297.9	281.1	230.5	153.2	76.5	44.1	72.5	7.6
Select white oaks	191.3	18.1	23.9	29.3	34.4	30.4	18.9	10.3	8.1	16.3	1.6
Select red oaks	71.9	2.5	3.0	8.0	10.2	8.2	9.6	14.6	5.4	8.8	1.8
Other white oaks	128.9	9.9	18.8	24.9	17.0	19.1	13.0	14.2	5.1	5.5	1.4
Other red oaks	508.4	33.4	69.4	80.3	69.7	73.0	54.2	48.2	30.2	43.7	6.4
Other hickories	156.5	12.3	22.5	27.6	23.0	22.0	23.6	11.6	7.0	6.9	...
Persimmon	2.4	1.7	0.1	...	...	0.6	...	...	...	...	...
Hard maple	0.3	...	0.3	...	...	...	...	...	...	...	...
Soft maple	58.9	13.8	8.0	16.3	4.5	4.6	5.3	2.7	0.8	2.0	1.0
Boxelder	1.2	...	...	0.4	...	...	0.3	...	0.5	...	...
Beech	15.4	1.1	2.0	...	1.4	1.4	1.2	3.3	1.4	3.5	...
Sweetgum	354.1	43.2	57.8	78.5	54.2	43.7	32.6	16.0	15.3	12.1	0.6
Blackgum	101.0	9.7	14.8	22.4	15.3	17.5	10.4	1.7	3.0	6.2	...
Other gums/tupelos	107.3	8.4	14.8	26.3	20.2	17.6	9.1	4.9	1.6	2.9	1.5
White ash	2.9	0.6	0.5	0.3	...	0.5	0.5	0.5	...	...	...
Other ashes	27.8	1.8	1.9	1.2	3.7	5.6	3.6	5.6	1.9	2.5	...
Sycamore	7.4	...	...	0.2	0.8	...	1.5	1.4	0.7	1.3	1.5
Basswood	0.6	...	...	...	0.6	...	...	...	...	...	...
Yellow-poplar	153.5	7.0	11.9	13.3	24.6	29.5	19.5	17.0	13.1	16.9	0.6
Magnolia	0.3	...	...	...	...	...	...	0.3	...	...	...
Sweetbay	34.4	5.4	7.9	7.3	5.1	4.4	1.5	2.8	...	0.2	...
Willow	4.9	...	1.2	1.8	...	1.9	...	...	...	...	...
Black cherry	7.8	1.5	3.0	2.8	0.4	...	...	...	...	...	...
American elm	7.5	0.6	0.8	1.1	1.1	0.9	...	0.6	1.1	1.3	...
Other elms	17.1	2.0	3.4	2.1	5.3	2.6	1.1	...	0.6	...	...
River birch	23.2	3.2	1.3	4.0	3.3	3.4	2.1	2.0	0.8	3.2	...
Hackberry	36.6	1.4	3.2	4.0	3.1	5.5	5.2	4.1	4.2	5.2	0.5
Black locust	0.3	0.1	0.2	...	...	...	...	...	...	...	...
Other locusts	2.1	...	0.7	...	0.6	0.6	0.3	...	...	...	...
Sassafras	1.4	1.4	...	...	...	...	...	...	...	...	...
Dogwood	3.7	3.4	0.3	...	...	...	...	...	...	...	...
Holly	1.3	0.1	0.3	0.9	...	...	...	...	...	...	...
Other commercial	2.7	0.9	0.3	...	0.6	...	0.4	...	0.5	...	...
Total hardwoods	2033.0	183.7	272.3	353.0	298.8	292.9	213.9	161.7	101.4	138.5	16.9
All species	3620.8	344.7	535.7	650.9	579.9	523.5	367.1	238.2	145.5	210.9	24.5

Table 35 – *Volume of growing stock in the saw-log portion of sawtimber trees on timberland by detailed species and diameter class, West-Central Alabama Counties, 1990*

		Diameter class (inches at breast height)							
Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet								
Longleaf pine	52.3	8.8	11.5	14.2	10.3	5.0	1.4	1.2	...
Slash pine	1.0	0.4	...	0.6	...	...	...	...	...
Shortleaf pine	157.7	42.2	43.5	38.5	20.2	7.7	2.1	3.4	...
Loblolly pine	721.9	150.4	170.9	141.8	105.7	55.0	35.2	59.4	3.6
Virginia pine	64.7	29.0	19.9	12.4	2.8	0.5	...	...	...
Spruce pine	3.6	0.2	...	1.5	...	0.9	...	1.0	...
Redcedar	1.8	0.7	...	0.3	0.2	0.3	0.2	...	...
Hemlock-spruce	0.5	...	0.5	...	...	...	...	...	...
Cypress	13.7	1.5	1.9	0.4	1.5	1.1	1.6	2.0	3.6
Total softwoods	1017.2	233.2	248.3	209.7	140.8	70.6	40.5	66.9	7.2
Select white oaks	95.2	...	25.0	24.6	15.4	8.4	6.7	13.8	1.3
Select red oaks	49.8	...	7.7	6.8	8.5	12.7	4.6	7.9	1.7
Other white oaks	60.4	...	12.8	15.3	10.6	11.7	4.2	4.5	1.2
Other red oaks	266.3	...	50.5	59.5	46.9	41.3	25.8	37.0	5.3
Other hickories	76.3	...	17.4	17.3	20.0	9.7	5.9	6.0	...
Persimmon	0.4	...	...	0.4	...	...	...	...	...
Soft maple	16.5	...	3.4	3.6	4.2	2.2	0.5	1.8	0.9
Boxelder	0.7	...	...	...	0.3	...	0.4	...	...
Beech	9.8	...	0.8	1.3	1.0	2.9	1.1	2.8	...
Sweetgum	140.4	...	38.8	35.0	28.2	13.7	13.4	10.7	0.5
Blackgum	44.1	...	10.8	14.3	9.3	1.5	2.6	5.6	...
Other gums/tupelos	44.2	...	13.4	13.1	7.5	4.3	1.6	2.6	1.5
White ash	1.3	...	...	0.5	0.4	0.4	...	...	...
Other ashes	19.7	...	2.8	4.7	3.3	4.8	1.9	2.3	...
Sycamore	6.3	...	0.7	...	1.1	1.3	0.6	1.2	1.5
Basswood	0.4	...	0.4	...	...	...	...	...	...
Yellow-poplar	102.0	...	17.2	24.5	17.1	15.1	11.8	15.6	0.6
Magnolia	0.3	...	...	...	...	0.3	...	...	...
Sweetbay	10.9	...	3.5	3.7	1.2	2.2	...	0.2	...
Willow	1.4	...	...	1.4	...	...	...	...	...
Black cherry	0.4	...	0.4	...	...	...	...	...	...
American elm	4.5	...	0.8	0.9	...	0.4	1.0	1.2	...
Other elms	7.6	...	4.1	1.9	1.0	...	0.6	...	...
River birch	12.4	...	2.4	2.8	1.9	1.7	0.7	2.9	...
Hackberry	22.8	...	2.2	4.3	4.3	3.6	3.5	4.4	0.5
Other locusts	1.0	...	0.3	0.4	0.2	...	...	...	...
Other commercial	1.4	...	0.5	...	0.3	...	0.5	...	...
Total hardwoods	996.4	...	215.9	236.3	182.9	138.3	87.4	120.5	15.0
All species	2013.6	233.2	464.2	446.0	323.7	208.9	128.0	187.4	22.1

Table 36 – *Volume of timber on timberland by species and class of timber, West-Central Alabama Counties, 1990*

Species	All live	Growing stock	Rough	Rotten
	Million cubic feet			
Longleaf pine	67.8	67.8	0.1	...
Slash pine	2.6	2.6	...	...
Shortleaf pine	246.0	241.9	3.7	0.3
Loblolly pine	1125.7	1114.7	11.0	...
Virginia pine	136.3	135.3	1.0	...
Spruce pine	3.9	3.9	...	...
Redcedar	5.9	5.2	0.4	0.3
Hemlock-spruce	1.0	1.0	...	...
Cypress	15.7	15.5	0.2	...
Total softwoods	1604.9	1587.8	16.5	0.6
Select white oaks	198.5	191.3	4.6	2.6
Select red oaks	74.8	71.9	1.1	1.8
Other white oaks	143.8	128.9	12.3	2.5
Other red oaks	539.0	508.4	26.1	4.5
Water hickory	0.7	...	0.7	...
Other hickories	167.8	156.5	9.3	1.9
Persimmon	2.5	2.4	0.1	...
Hard maple	0.5	0.3	0.2	...
Soft maple	73.2	58.9	12.4	1.9
Boxelder	1.4	1.2	0.2	...
Beech	22.1	15.4	4.2	2.5
Sweetgum	374.8	354.1	15.5	5.2
Blackgum	113.4	101.0	10.7	1.6
Other gums/tupelos	116.8	107.3	7.6	1.9
White ash	2.9	2.9	...	...
Other ashes	30.6	27.8	2.7	0.1
Sycamore	7.4	7.4	...	...
Basswood	0.6	0.6	...	...
Yellow-poplar	160.1	153.5	3.3	3.3
Magnolia	1.2	0.3	0.9	...
Sweetbay	42.2	34.4	3.2	4.5
Willow	4.9	4.9	...	...
Black cherry	8.1	7.8	0.2	0.1
American elm	9.6	7.5	1.5	0.6
Other elms	18.9	17.1	1.8	...
River birch	24.5	23.2	1.0	0.3
Hackberry	41.2	36.6	3.5	1.2
Black locust	0.3	0.3	...	...
Other locusts	2.3	2.1	0.2	...
Sassafras	1.9	1.4	0.4	0.1
Dogwood	7.1	3.7	3.4	...
Holly	1.4	1.3	0.1	...
Other commercial	4.0	2.7	1.3	...
Total hardwoods	2198.4	2033.0	128.6	36.8
Noncommercial	67.9	...	67.9	...
All species	3871.1	3620.8	212.9	37.4

Table 37 – *Volume of sawtimber for tree grade 1 on timberland by detailed species and diameter class, West-Central Alabama Counties, 1990*

		Diameter class (inches at breast height)							
Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Longleaf pine	50.7	8.6	3.3	10.9	13.3	5.6	1.4	7.5	...
Shortleaf pine	418.0	87.5	97.0	125.6	64.7	29.7	9.4	4.1	...
Loblolly pine	1110.8	116.8	217.4	190.1	191.9	135.0	66.4	188.9	4.4
Virginia pine	17.4	4.8	6.0	3.3	3.2	...	...	...	...
Redcedar	8.9	3.4	...	1.6	1.1	1.5	1.3	...	...
Cypress	29.3	...	...	...	3.1	3.6	4.3	8.4	9.8
Total softwoods	1635.1	221.1	323.7	331.5	277.4	175.4	82.8	209.0	14.2
Select white oaks	58.4	...	...	...	9.2	10.3	8.6	30.4	...
Select red oaks	92.0	...	...	...	10.3	29.4	17.9	34.4	...
Other white oaks	28.0	...	...	...	10.8	7.5	1.2	8.6	...
Other red oaks	127.4	...	...	...	9.1	45.3	43.7	29.3	...
Other hickories	42.6	...	...	...	3.5	18.3	14.6	6.3	...
Boxelder	3.0	...	...	...	...	...	3.0	...	...
Sweetgum	98.2	...	...	...	21.4	25.3	23.5	28.0	...
Blackgum	8.1	...	...	...	2.2	1.4	2.5	2.0	...
Other gums/tupelos	14.3	...	...	...	5.2	4.0	...	5.0	...
Other ashes	18.0	...	...	...	...	6.7	8.3	3.1	...
Sycamore	5.6	...	...	...	...	5.6	...	...	...
Yellow-poplar	53.3	...	...	...	9.0	12.6	19.9	11.9	...
American elm	8.0	...	...	...	...	...	3.4	4.6	...
Hackberry	30.8	...	...	...	15.2	6.7	2.9	6.0	...
Total hardwoods	587.8	...	...	...	95.9	173.0	149.3	169.6	...
All species	2222.9	221.1	323.7	331.5	373.3	348.4	232.1	378.5	14.2

Table 38 —*Volume of sawtimber for tree grade 2 on timberland by detailed species and diameter class, West-Central Alabama Counties, 1990*

		Diameter class (inches at breast height)							
Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Longleaf pine	86.6	11.2	18.9	27.9	14.5	12.0	2.1	...	...
Slash pine	3.3	...	...	3.3	...	...	...	...	...
Shortleaf pine	147.0	26.6	42.1	37.2	37.4	3.7	...	...	...
Loblolly pine	795.4	100.9	149.3	172.7	144.9	45.4	61.3	113.0	7.9
Virginia pine	48.4	16.3	16.5	15.6	...	...	...	...	...
Cypress	14.6	...	4.3	1.8	1.2	...	4.6	2.6	...
Total softwoods	1095.4	155.1	231.2	258.5	198.1	61.0	68.0	115.6	7.9
Select white oaks	132.0	...	...	30.1	46.7	18.3	17.2	15.4	4.3
Select red oaks	67.1	...	...	8.6	12.4	28.0	7.7	2.3	8.0
Other white oaks	50.7	...	...	6.2	11.2	24.4	4.9	4.0	...
Other red oaks	244.2	...	...	44.8	55.2	58.7	23.7	50.2	11.6
Other hickories	86.7	...	...	24.7	37.8	15.1	1.9	7.1	...
Soft maple	5.4	...	...	...	5.4	...	...	...	...
Boxelder	1.9	...	...	...	1.9	...	...	...	...
Beech	7.2	...	...	...	...	2.9	...	4.2	...
Sweetgum	156.9	...	...	70.7	38.9	20.3	11.0	13.2	2.8
Blackgum	64.9	...	...	32.9	16.8	...	7.6	7.7	...
Other gums/tupelos	56.5	...	...	30.2	13.6	9.2	3.6	...	...
Other ashes	29.6	...	...	16.3	7.2	...	3.0	3.1	...
Sycamore	13.1	...	...	...	2.7	...	...	...	10.4
Yellow-poplar	119.0	...	...	37.7	24.7	24.2	13.3	19.0	...
Magnolia	1.2	...	...	...	...	1.2	...	...	...
Sweetbay	5.0	...	...	3.2	...	1.8	...	...	...
American elm	1.5	...	...	...	...	1.5	...	...	...
Other elms	2.9	...	...	...	2.9	...	...	...	...
River birch	11.4	...	...	5.2	3.5	2.8	...	...	...
Hackberry	27.5	...	...	10.4	3.2	5.2	4.1	4.6	...
Total hardwoods	1084.8	...	...	321.1	284.0	213.7	98.1	130.7	37.2
All species	2180.2	155.1	231.2	579.6	482.1	274.7	166.1	246.3	45.0

Table 39 – *Volume of sawtimber for tree grade 3 on timberland by detailed species and diameter class, West - Central Alabama Counties, 1990*

Species	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Longleaf pine	172.0	28.1	44.2	46.7	34.5	15.0	3.5	...	...
Slash pine	2.4	2.4	...	...	...	...	...	...	...
Shortleaf pine	371.7	115.8	111.2	80.5	27.9	16.4	4.3	15.5	...
Loblolly pine	2351.2	577.1	627.4	481.9	310.5	152.5	96.7	92.5	12.5
Virginia pine	276.0	129.2	86.8	46.4	10.4	3.1	...	...	...
Spruce pine	23.6	1.1	...	9.7	...	6.1	...	6.7	...
Hemlock-spruce	2.9	...	2.9	...	...	...	...	...	...
Cypress	31.7	8.3	5.6	...	4.7	2.5	...	...	10.6
Total softwoods	3231.5	862.2	878.2	665.2	388.0	195.6	104.5	114.7	23.1
Select white oaks	252.4	...	95.7	77.3	25.6	18.4	10.6	24.8	...
Select red oaks	68.6	...	28.4	10.8	9.4	14.3	...	5.7	...
Other white oaks	194.6	...	49.5	58.9	24.1	32.2	10.2	11.3	8.4
Other red oaks	501.9	...	123.6	120.2	64.6	67.5	48.2	66.1	11.7
Other hickories	213.6	...	60.0	45.9	62.6	30.4	6.7	8.0	...
Persimmon	2.4	...	...	2.4	...	...	...	...	...
Soft maple	35.3	...	3.6	8.2	2.5	8.4	2.0	7.7	2.9
Beech	16.3	...	...	...	...	6.5	2.6	7.1	...
Sweetgum	430.9	...	174.2	103.3	73.9	24.1	33.6	21.8	...
Blackgum	121.7	...	49.7	40.1	22.4	...	...	9.5	...
Other gums/tupelos	114.4	...	62.0	25.2	12.5	6.8	4.6	2.3	0.9
White ash	7.0	...	...	2.7	1.6	2.6	...	...	...
Other ashes	51.9	...	10.5	12.5	9.4	12.1	...	7.4	...
Sycamore	14.0	...	4.0	...	1.4	...	3.4	5.2	...
Basswood	2.1	...	2.1	...	...	...	...	...	...
Yellow-poplar	192.3	...	64.0	57.8	23.2	21.6	5.4	16.4	3.8
Sweetbay	18.3	...	5.4	9.3	3.6	...	...	...	...
Willow	3.9	...	...	3.9	...	...	...	...	...
Black cherry	2.0	...	2.0	...	...	...	...	...	...
American elm	9.0	...	4.6	...	...	1.1	3.3	...	...
Other elms	26.2	...	16.4	6.4	3.4	...	...	...	...
River birch	41.2	...	7.9	5.2	5.2	4.7	1.5	16.8	...
Hackberry	35.0	...	4.5	11.4	...	6.8	7.9	4.4	...
Other locusts	5.1	...	1.6	2.3	1.2	...	...	...	...
Other commercial	3.3	...	1.3	...	2.0	...	...	...	...
Total hardwoods	2363.5	...	771.1	603.9	348.7	257.5	139.9	214.6	27.7
All species	5594.9	862.2	1649.3	1269.1	736.7	453.1	244.4	329.3	50.8

Table 40 —*Volume of sawtimber for tree grade 4 on timberland by detailed species and diameter class, West-Central Alabama Counties, 1990*

Species	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Select white oaks	84.6	...	38.0	31.2	6.9	...	...	8.6	...
Select red oaks	57.2	...	15.8	18.3	12.5	8.4	2.1	...	...
Other white oaks	59.1	...	16.8	13.8	13.3	9.8	5.4	...	...
Other red oaks	590.9	...	134.9	157.1	117.3	68.8	39.3	69.1	4.5
Other hickories	92.8	...	32.0	27.9	14.8	...	8.3	9.8	...
Soft maple	40.8	...	12.7	8.7	15.4	2.1	...	2.0	...
Beech	32.4	...	3.9	5.6	5.7	9.0	2.1	6.1	...
Sweetgum	108.6	...	40.0	18.3	25.6	11.7	13.0	...	...
Blackgum	15.2	...	6.5	6.5	...	...	2.2	...	...
Other gums/tupelos	5.8	...	...	4.2	1.7	...	...	...	...
Other ashes	13.2	...	2.6	...	2.4	8.2	...	...	...
Sycamore	2.6	...	...	...	...	2.6	...	...	...
Yellow-poplar	192.1	...	30.1	48.8	35.0	23.8	20.4	34.0	...
Sweetbay	31.6	...	14.3	3.4	1.7	11.1	...	1.1	...
Willow	3.1	...	...	3.1	...	...	...	...	...
American elm	8.3	...	...	5.3	...	...	...	3.0	...
Other elms	6.4	...	4.6	1.8	...	...	...	...	...
River birch	11.5	...	2.0	2.8	2.3	2.6	...	1.8	...
Hackberry	22.0	...	4.2	...	2.4	...	2.9	12.5	...
Other commercial	1.7	...	1.7	...	...	...	...	...	...
Total hardwoods	1380.0	...	360.1	356.7	256.9	158.1	95.7	148.0	4.5
All species	1380.0	...	360.1	356.7	256.9	158.1	95.7	148.0	4.5

Table 41 —*Volume of sawtimber on timberland by species and ownership class, West-Central Alabama Counties, 1990*

Species	All ownerships	National forest	Other public	Forest industry	Forest industry-leased	Other private
	Million board feet					
Yellow pines	5971.8	570.5	42.4	1410.2	251.1	3697.6
Cypress	75.6	...	...	10.5	...	65.1
Redcedar	8.9	...	...	3.0	...	6.0
Other softwoods	2.9	...	...	2.9	...	...
Total softwoods	6059.2	570.5	42.4	1426.5	251.1	3768.7
Select white-red oaks	846.9	33.1	12.2	121.9	12.9	666.8
Other white-red oaks	1932.3	54.2	14.9	360.2	71.2	1431.8
Hickory	459.7	19.3	13.9	72.4	11.6	342.5
Sweetgum	833.5	48.8	7.2	233.3	27.1	517.0
Tupelo and blackgum	450.8	25.5	...	38.6	8.0	378.7
Ash-walnut-black cherry	128.5	...	...	32.4	3.0	93.0
Yellow-poplar	601.3	55.1	14.0	96.7	25.1	410.4
Other hardwoods	560.0	8.4	24.6	111.7	11.2	404.0
Total hardwoods	5812.9	244.3	86.8	1067.2	170.2	4244.3
All species	11872.1	814.8	129.3	2493.7	421.4	8012.9

Table 42 —*Average net annual growth, average annual removals, and average annual mortality of live trees* [1] *by county and species group, West-Central Alabama Counties, 1990*

County	Growth			Removals			Mortality		
	All species	Softwood	Hardwood	All species	Softwood	Hardwood	All species	Softwood	Hardw
	Million cubic feet								
Bibb	16.9	10.1	6.8	18.8	13.2	5.6	4.1	1.5	2.5
Fayette	17.6	5.5	12.1	26.1	10.4	15.7	3.8	1.4	2.4
Greene	16.1	5.9	10.2	11.9	8.5	3.4	4.1	1.4	2.7
Hale	13.8	5.3	8.5	19.2	10.0	9.2	2.9	1.9	1.0
Lamar	16.0	6.6	9.4	13.5	7.2	6.3	7.2	1.4	5.8
Marion	17.9	8.0	9.8	19.8	13.6	6.2	7.4	4.6	2.8
Perry	19.0	11.4	7.6	22.3	14.5	7.9	5.0	2.0	3.0
Pickens	36.4	19.9	16.5	27.9	18.4	9.5	12.0	6.5	5.5
Tuscaloosa	36.5	22.9	13.6	61.5	41.0	20.5	10.2	3.5	6.7
All counties	190.1	95.6	94.5	220.9	136.6	84.3	56.6	24.2	32.4

[1] Excludes trees less than 5.0 inches in diameter at breast height.

Table 43 —*Average net annual growth, average annual removals, and average annual mortality of live trees* [1] *by ownership class and species group, West-Central Alabama Counties, 1990*

Ownership class	Growth			Removals			Mortality		
	All classes	Softwood	Hardwood	All species	Softwood	Hardwood	All Species	Softwood	Hardwo
	Million cubic feet-								
National forest	5.7	3.4	2.3	5.5	5.0	0.5	2.0	1.2	0.8
Other public	1.3	0.2	1.1	2.5	2.1	0.3	0.3	...	0.3
Forest industry	48.1	30.7	17.4	75.6	49.8	25.7	16.1	8.3	7.8
Forest industry-leased	6.2	2.9	3.3	10.3	6.5	3.8	1.5	0.9	0.7
Other private	128.8	58.3	70.4	127.1	73.2	53.9	36.7	13.9	22.9
All ownerships	190.1	95.6	94.5	220.9	136.6	84.3	56.6	24.2	32.4

[1] Excludes trees less than 5.0 inches in diameter at breast height.

FIGURES

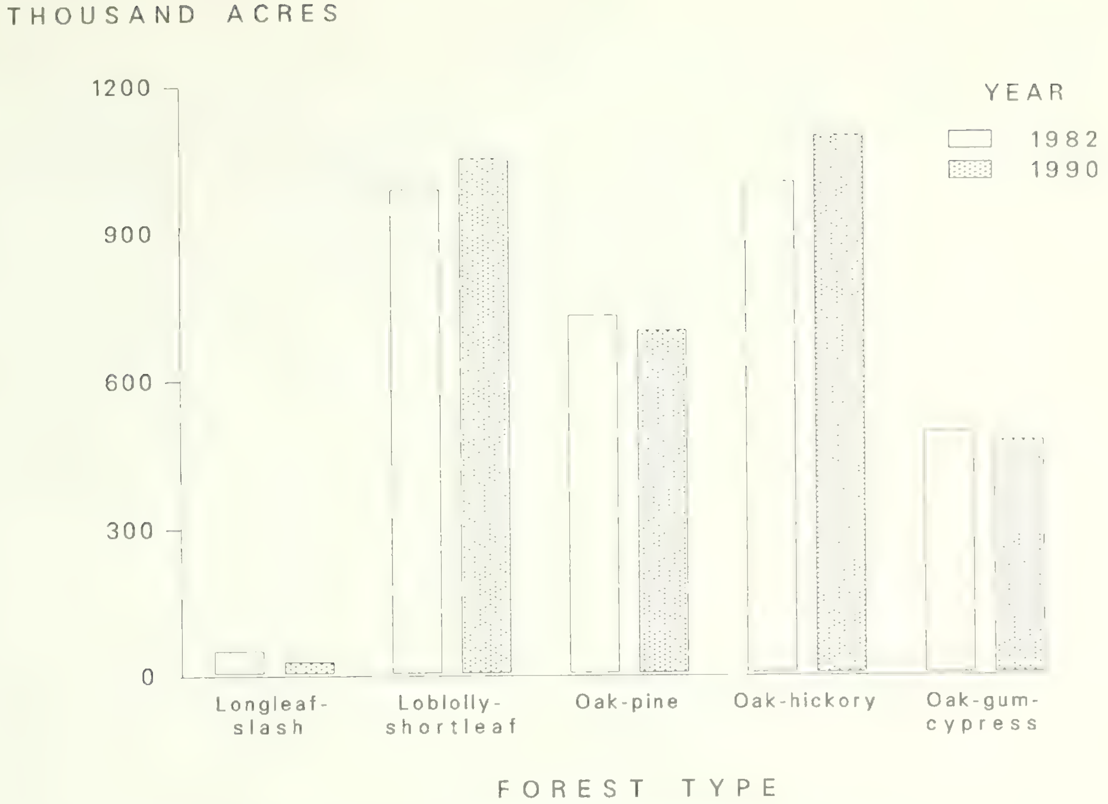

Figure 1.—*Area of timberland by forest type, West-Central Alabama, 1982 and 1990.*

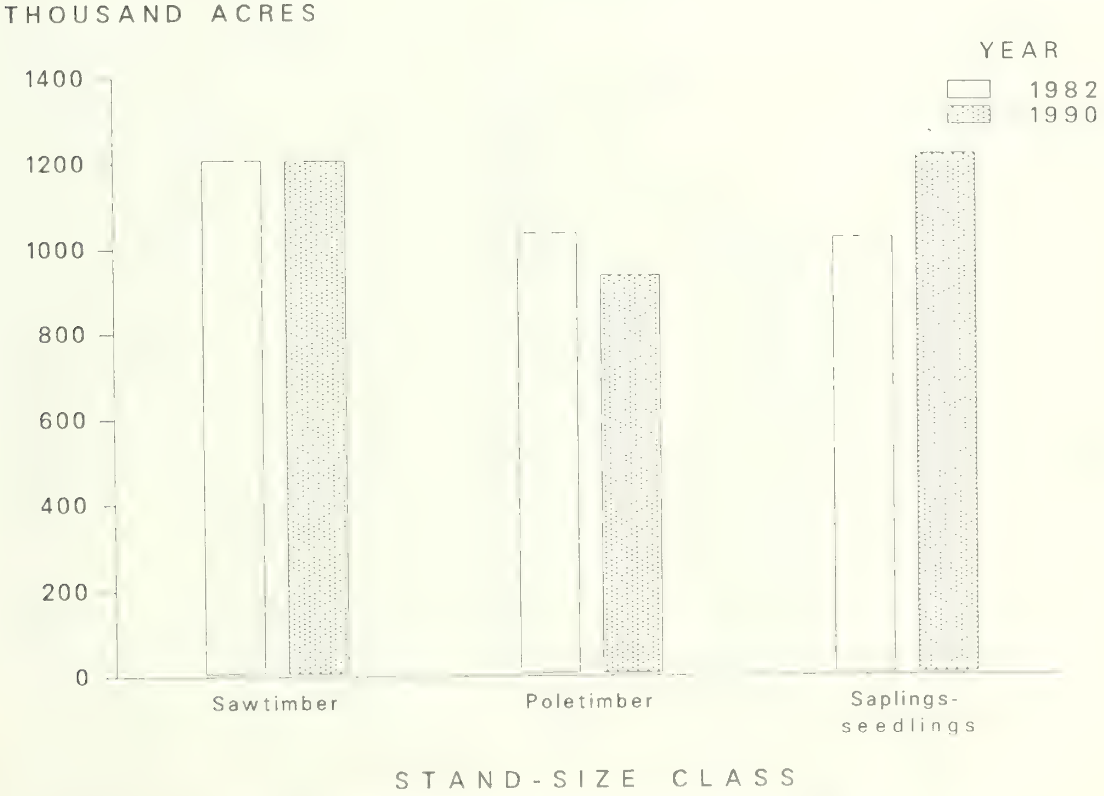

Figure 2.—*Area of timberland by stand-size class, West-Central Alabama, 1982 and 1990.*

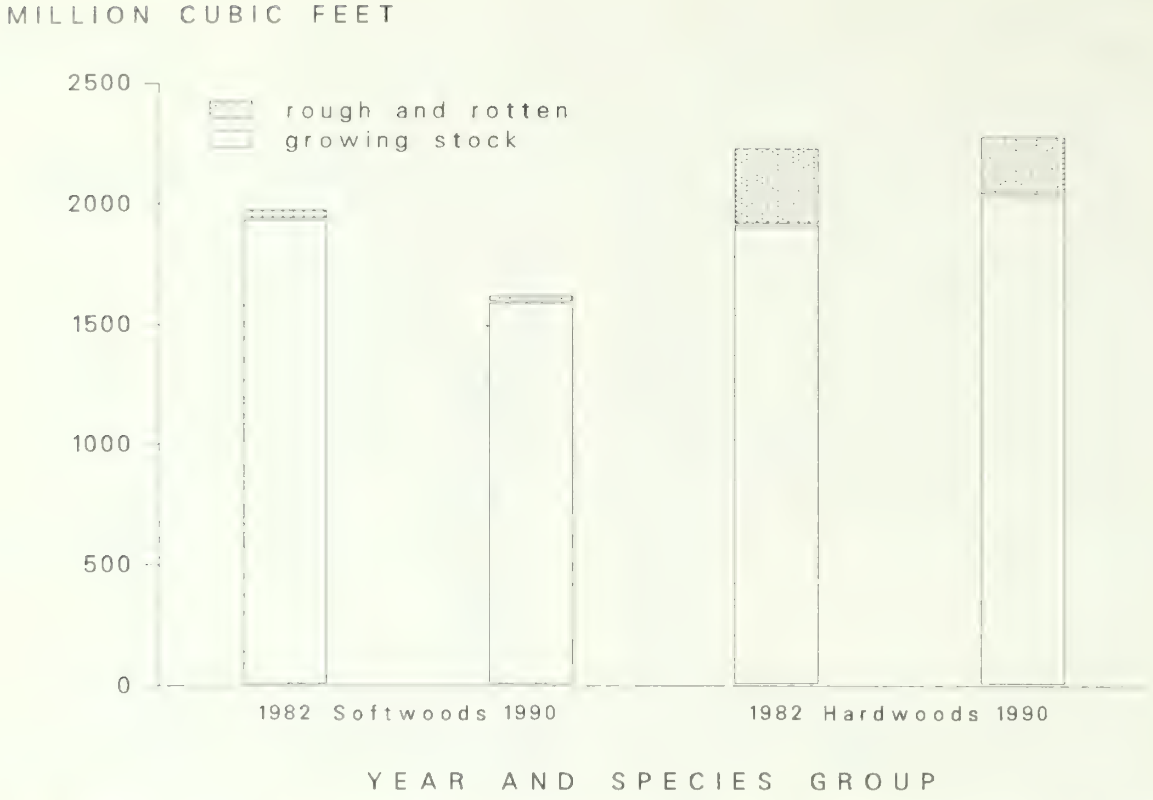

Figure 3.—*Volume of live trees on timberland by species group and class of timber, West-Central Alabama, 1982 and 1990.*

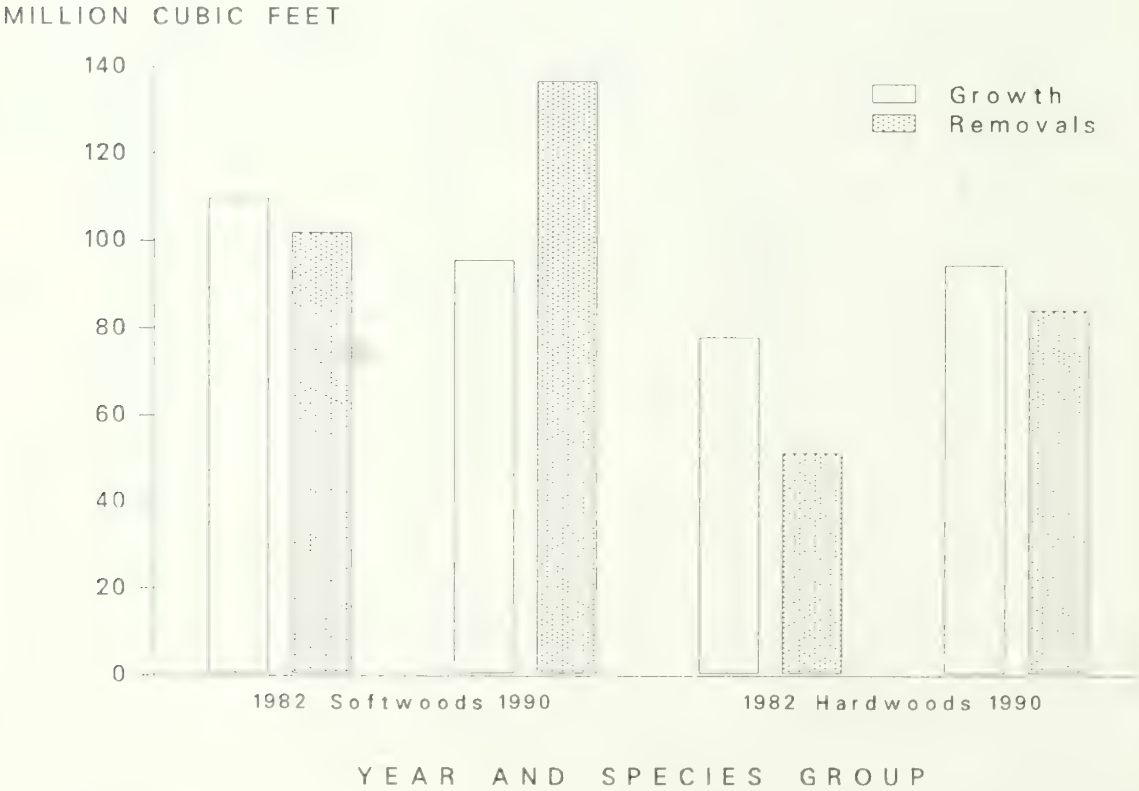

Figure 4.—*Average net annual growth and average annual removals of live trees on timberland by species grou West-Central Alabama, 1982 and 1990.*

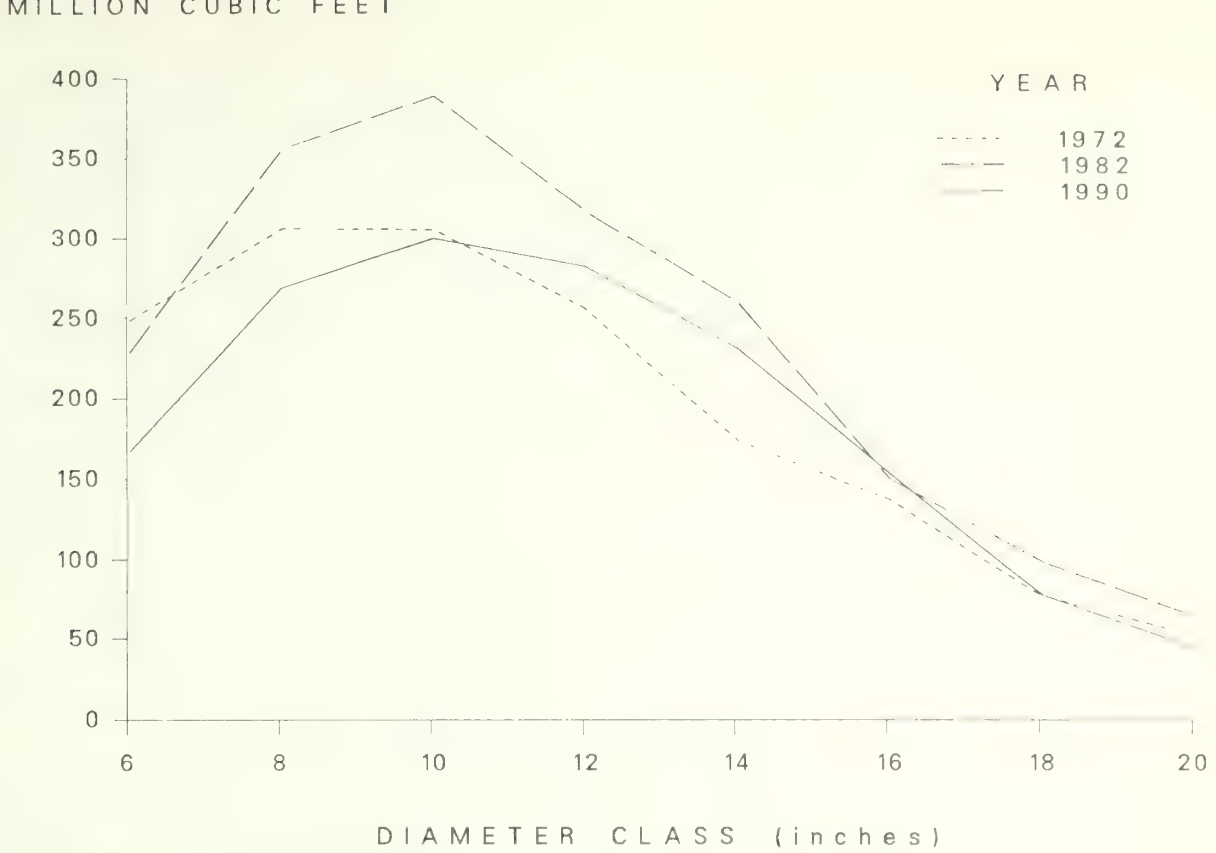

Figure 5.—*Volume of live softwood trees on timberland by diameter class, West-Central Alabama, 1972, 1982 and 1990.*

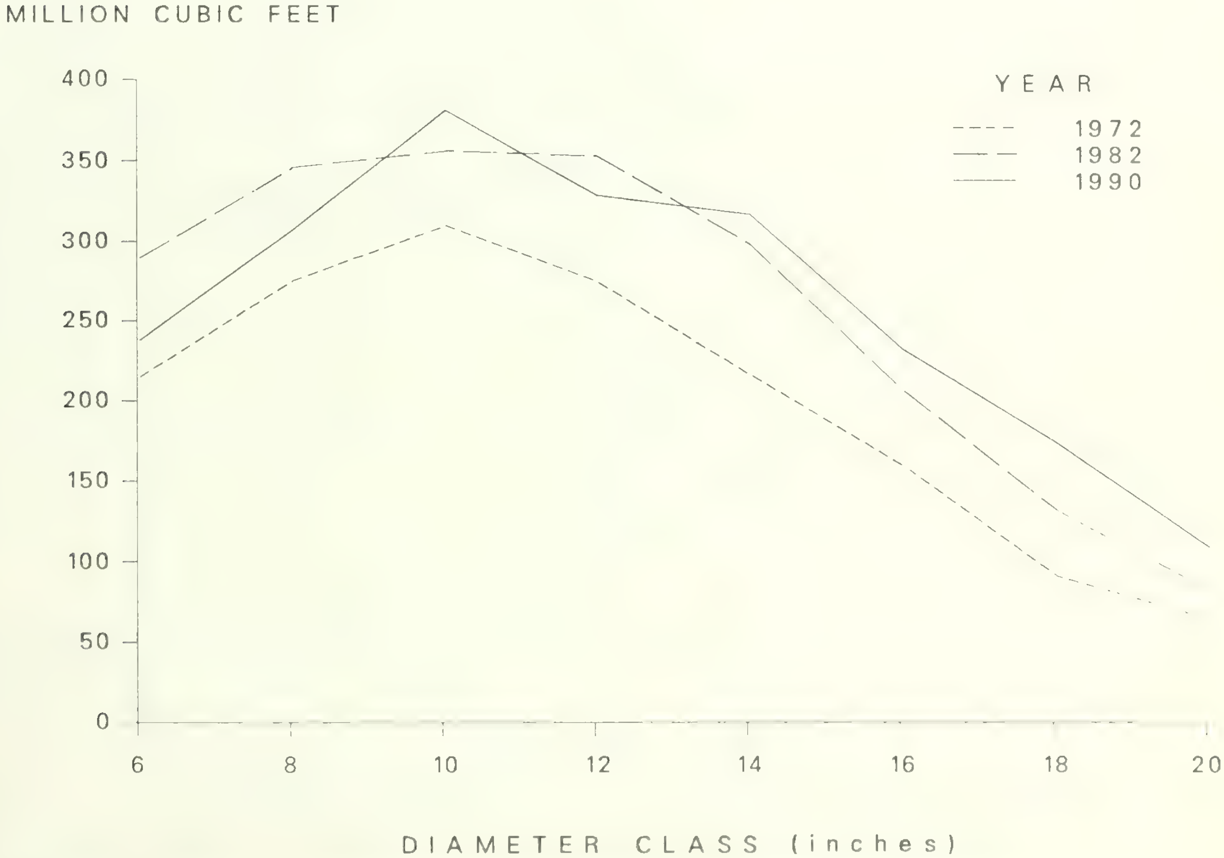

Figure 6.—*Volume of live hardwood trees on timberland by diameter class, West-Central Alabama, 1972, 1982, and 1990.*

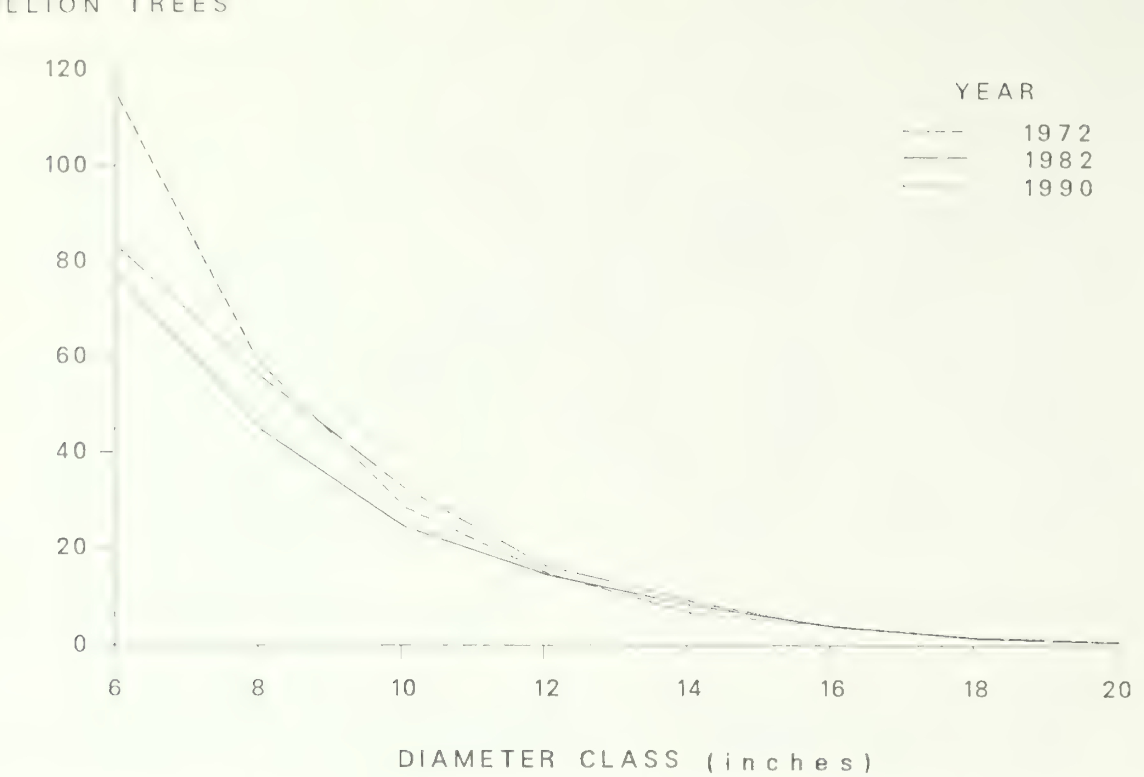

Figure 7.—*Number of live softwood trees on timberland by diameter class, West-Central Alabama, 1972, 1982 and 1990.*

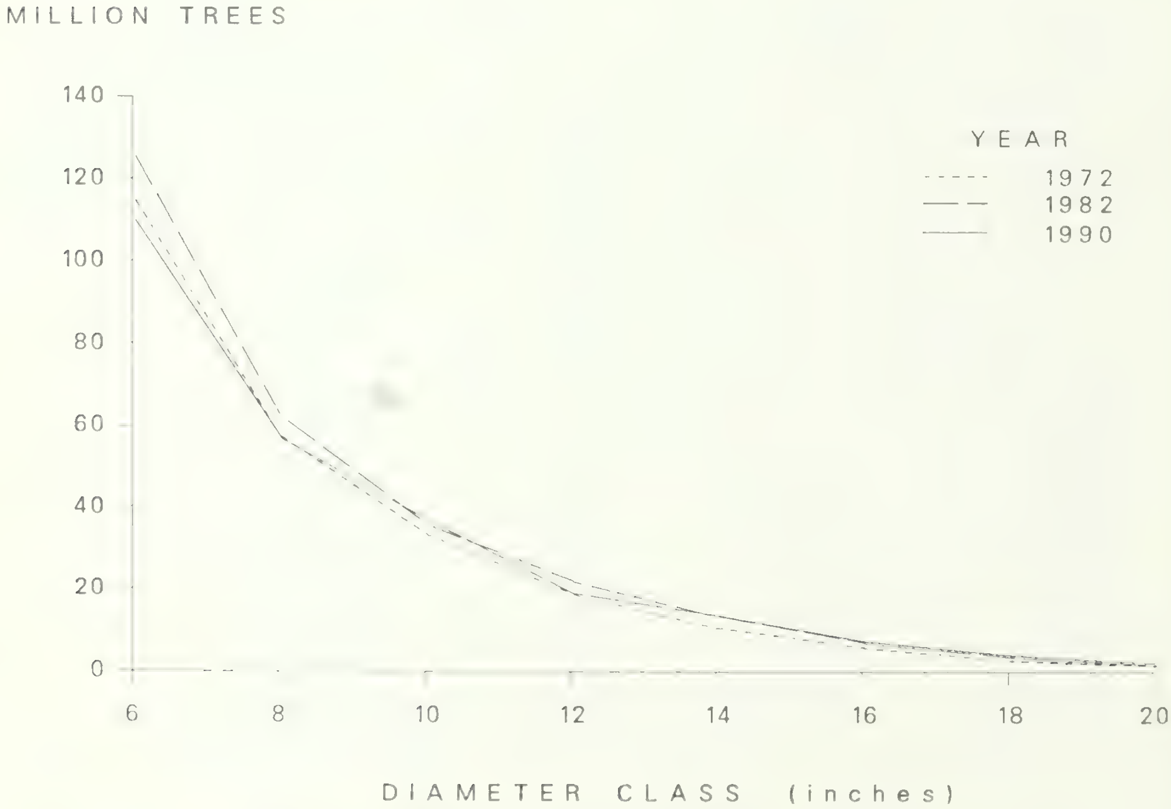

Figure 8.—*Number of live hardwood trees on timberland by diameter class, West-Central Alabama, 1972, 1982, and 1990.*

McWilliams, William H.; Duncan, K. L.; Vissage, John S. 1990.
Forest Statistics for West-Central Alabama Counties–1990.
Resour. Bull. SO-150. New Orleans, LA: U. S. Department of
Agriculture, Forest Service, Southern Forest Experiment
Station. 30p.

Tabulates forest resource information from a new inventory of the West-Central Counties of Alabama.

Additional Keywords: Area, volume, forest type, stand size, and ownership.

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Distribution Maps for Midsouth Tree Species

Roy C. Beltz, and Daniel F. Bertelson

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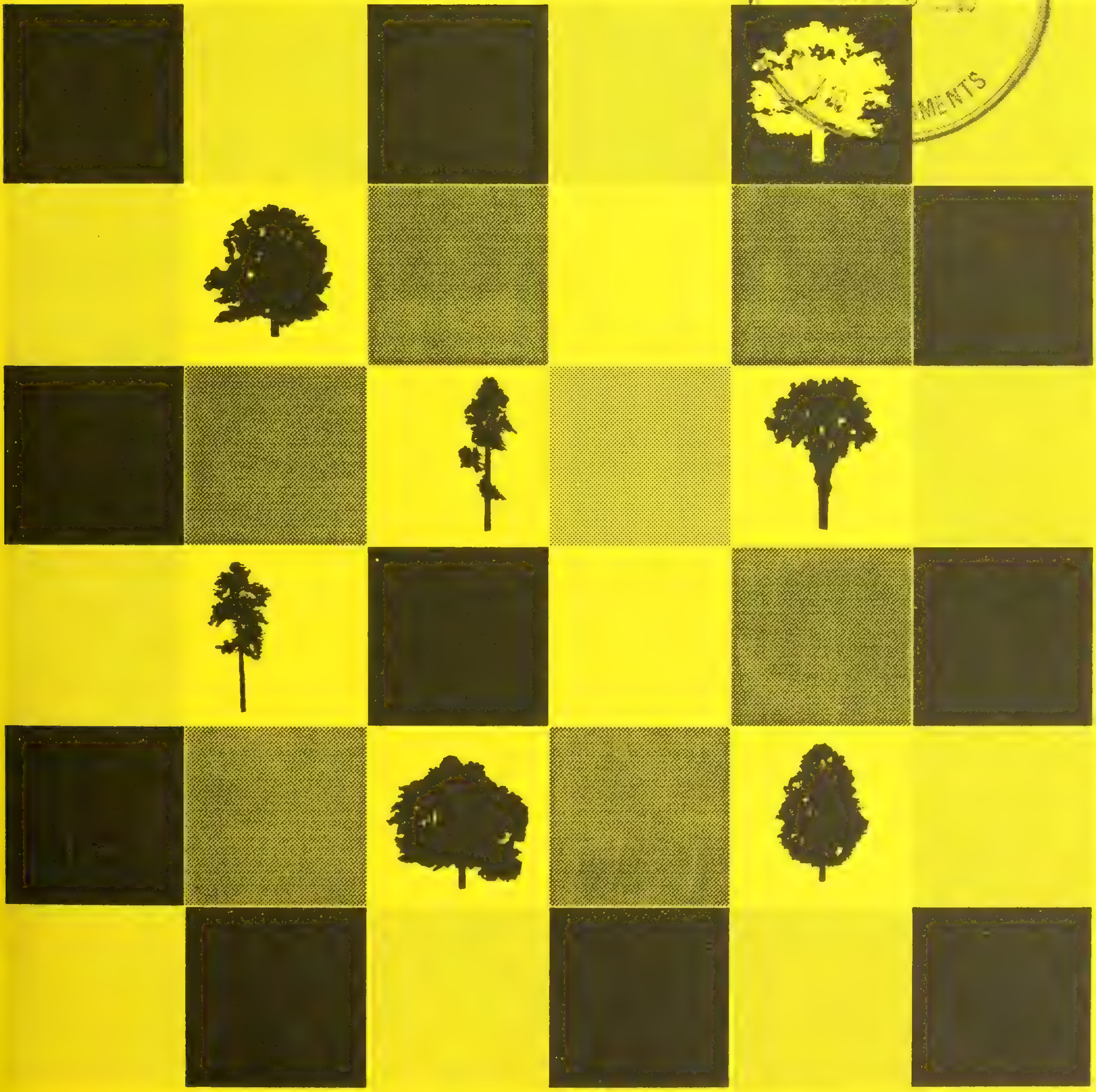

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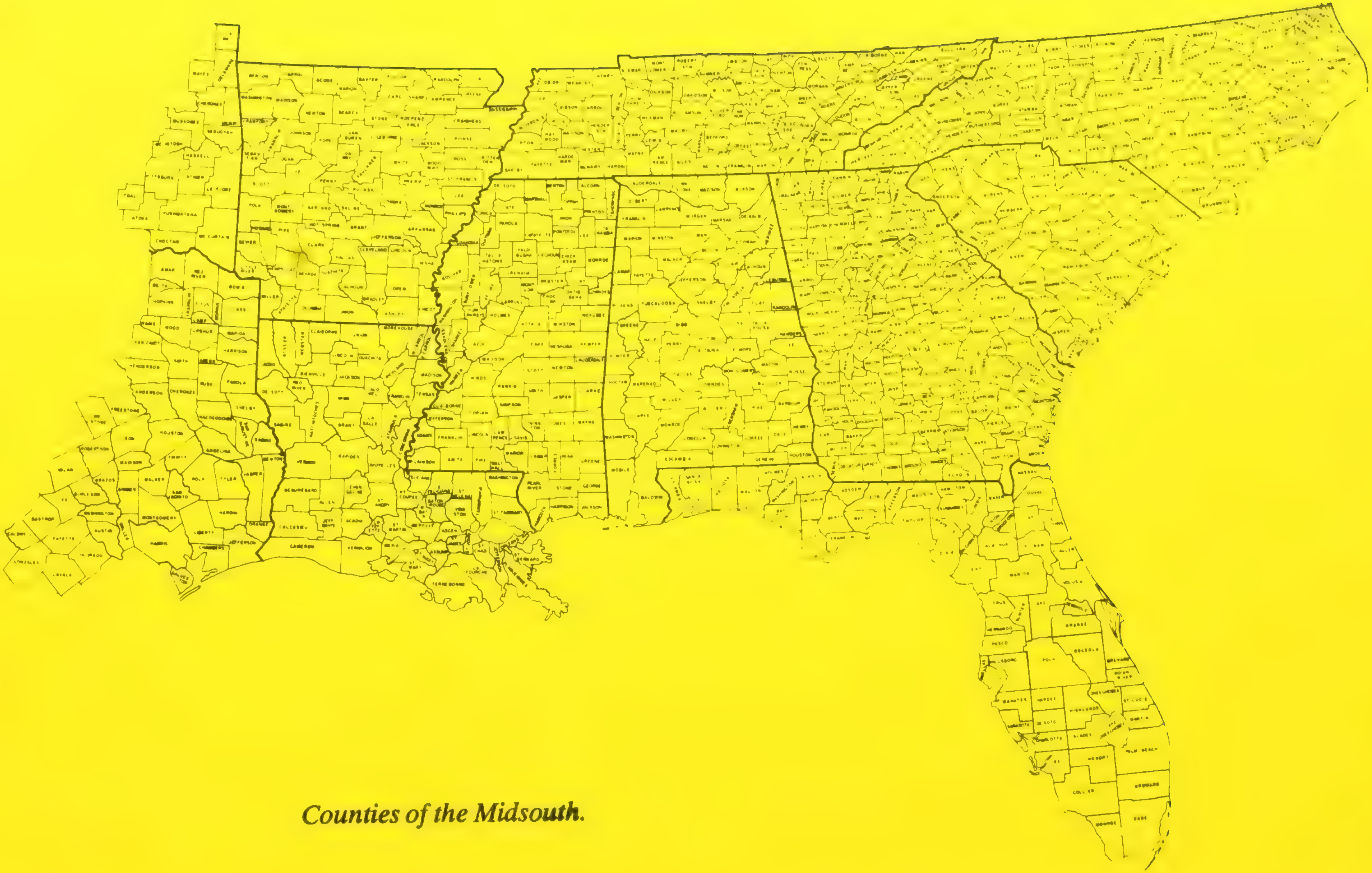


Counties of the Midsouth.

Distribution Maps for Midsouth Tree Species

Roy C. Beltz and Daniel F. Bertelson

The Midsouth is an important timber-producing region, with a wide variety of sites and species. In addition to timber production, increasing demands for nontimber amenities are placed on the region's forests. These maps indicate the distribution of individual species recorded in surveys of the Midsouth conducted by the U.S. Department of Agriculture, Forest Servce. Included are important timber species plus several species that are important primarily from a wildlife, aesthetic, or other nontimber perspective.

Approximately 17,500 forest plots are remeasured during a complete survey cycle of the seven Midsouth states (Alabama, Arkansas, Louisiana, Mississippi, Oklahoma, Tennessee, and Texas). These plots, each about 1 acre in size and representing roughly 9 square miles, are depicted in figure 1 in their approximate geographic location.

In the late 1940's and early 1950's, survey plots were established throughout the Midsouth using a 3-mile grid spacing. Permanent plots were installed at forested grid intersections. In some instances, the grid was overlaid on an entire survey unit; in others, single counties (parishes in Louisiana) were overlaid. Coordinates used to depict plot locations were developed by referencing one central point in each county. The latitude and longitude of all plots in the county were subsequently developed from the central coordinate on the basis of the 3- by 3-mile spacing. Thus, the coordinates are crude and serve only to position the plot attributes relative to one another within the Midsouth. Moreover, the actual ground location of a plot may differ from a precise 3- by 3-spacing because of establishment procedures and changes in conditions over several decades.

Prominent features of the region are immediately apparent from the distribution of forest plots. Sparsely forested areas are apparent in the Mississippi Delta in Arkansas, Mississippi, and Louisiana, primarily due to the predominance of agricultural land use. Similarly, the black prairie region extending from southeast Alabama westward and northward to northeast Mississippi is sparsely forested. The same is true of the Red and Arkansas River bottoms.

Other areas are sparsely forested for varying physical reasons. The coastal marshes of Louisiana and Texas, for example, do not support forests. The western extremity of southern forests is limited by the average annual rainfall amounts in Texas and Oklahoma. Dots represent plots where the forest is capable of growing 20 or more cubic feet of wood per acre per year.

To be recorded in the survey, a species must be capable of growing to fit the definition of a tree; i.e., 15 feet tall and having a central stem. Species that do not occur in the region, or that were not identified by survey field crews, were not considered. Some species were grouped because of the difficulty in identifying them or because they occur infrequently in the survey.

Several sources of error could affect the species distribution maps. Since surveys are done year-round, and certain species are hard to identify without leaves, some species identification errors are bound to occur. Seedlings are especially subject to this type of error. Errors are also made when trying to distinguish minor differences between very similar species. In addition, some species are known to exist in the Midsouth, but, unless they happen to be growing on one of the 3- by 3-mile sample plots, they will not be represented in the mapped data.

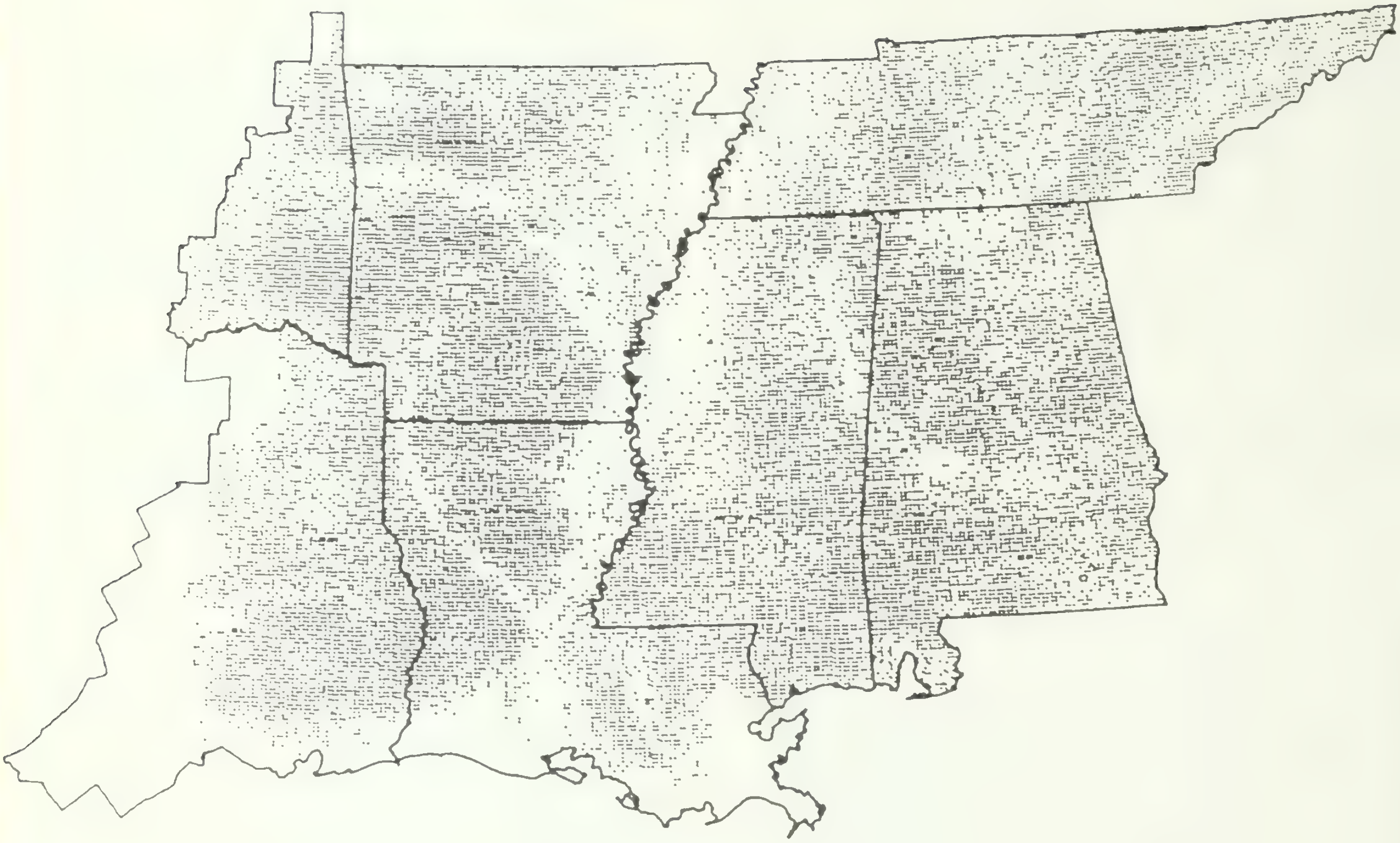
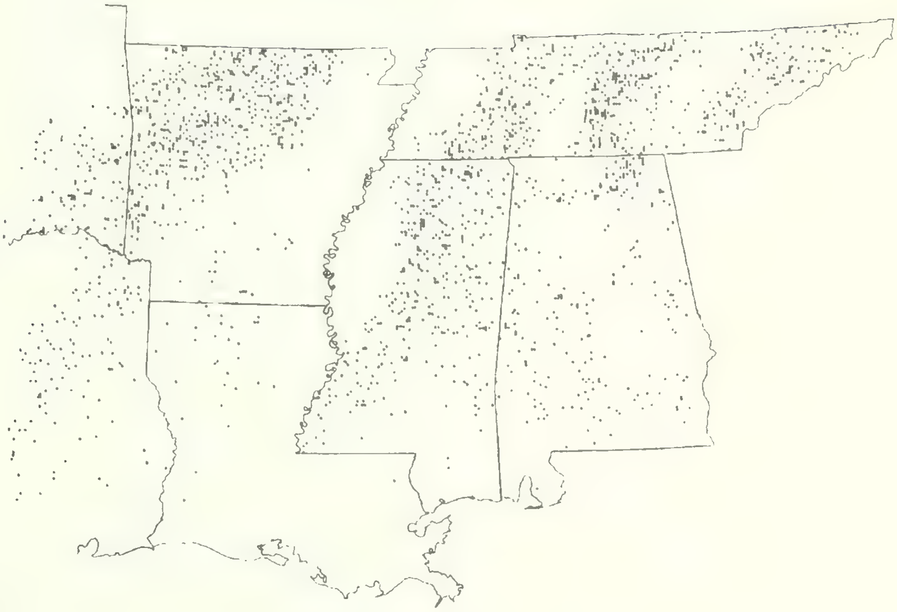


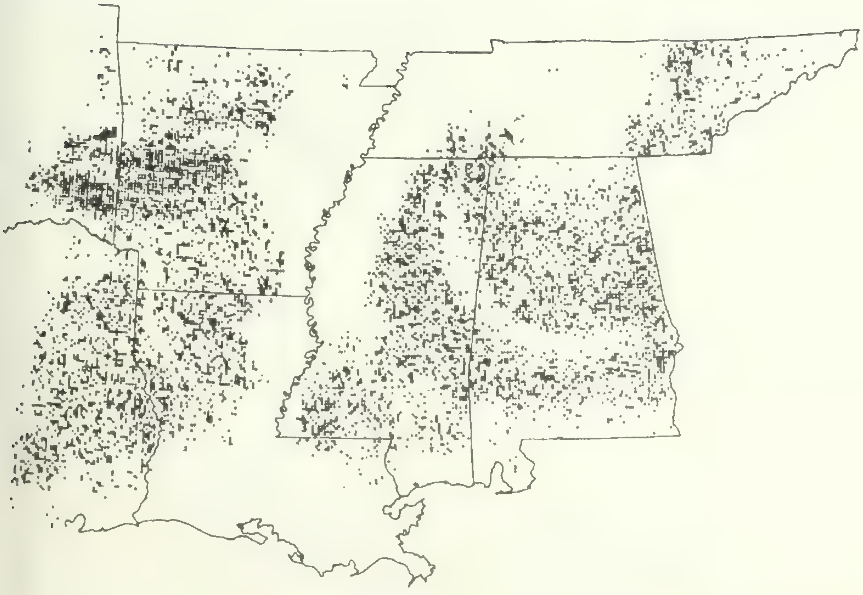
Figure 1.—*Location of forest inventory and analysis plots on timberland.*

Softwoods

Southern redcedar
(Juniperus silicicola)

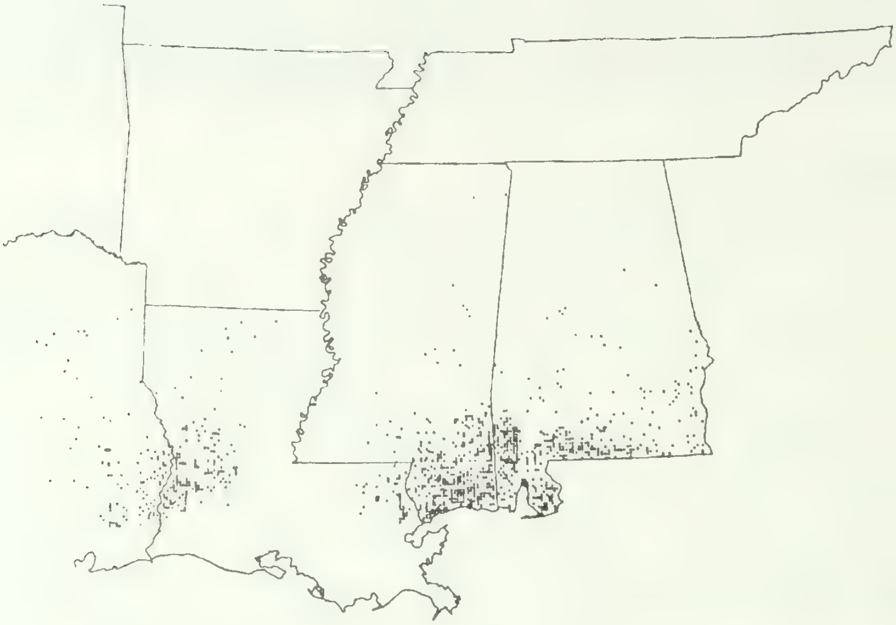
Eastern redcedar
(Juniperus virginiana)

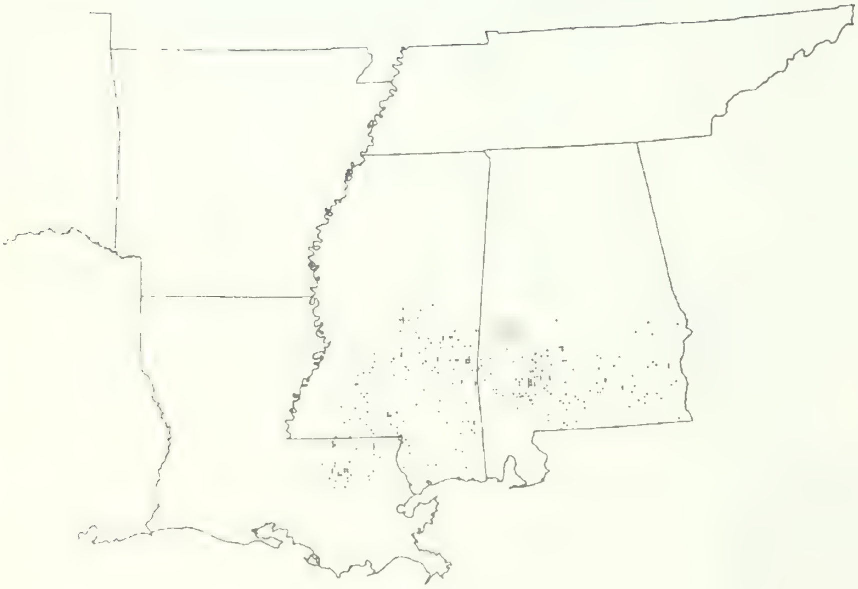




Shortleaf pine
(Pinus echinata)

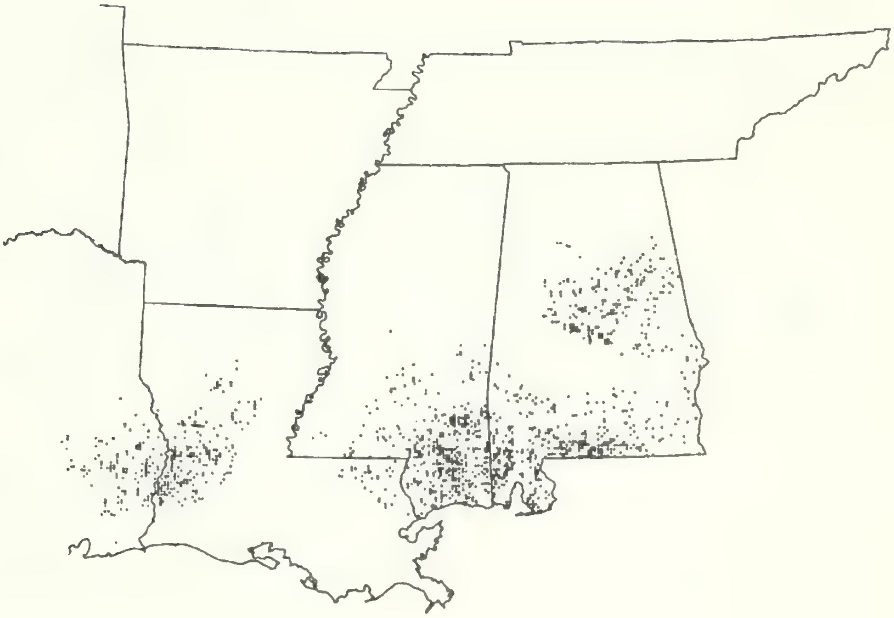
Slash pine
(Pinus elliottii)





Spruce pine
(Pinus glabra)

Longleaf pine
(Pinus palustris)



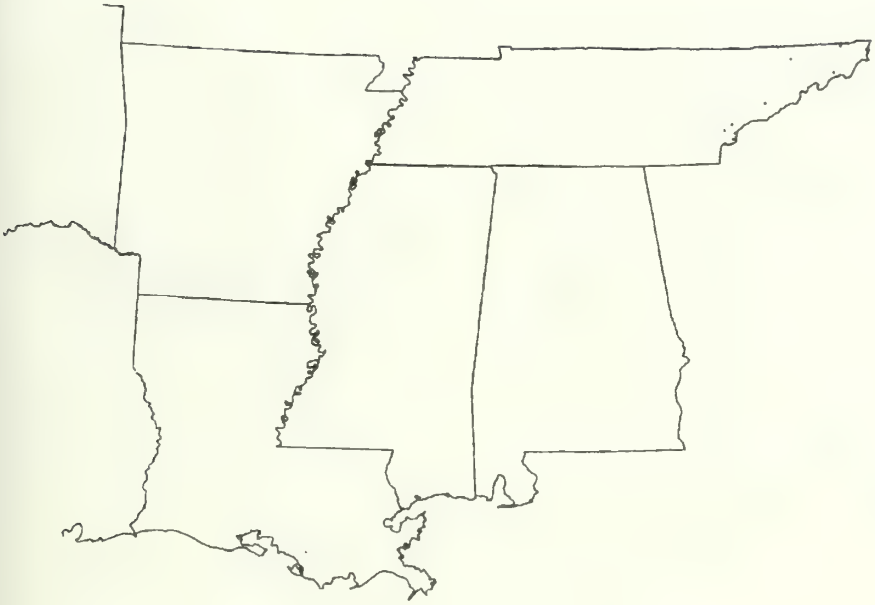
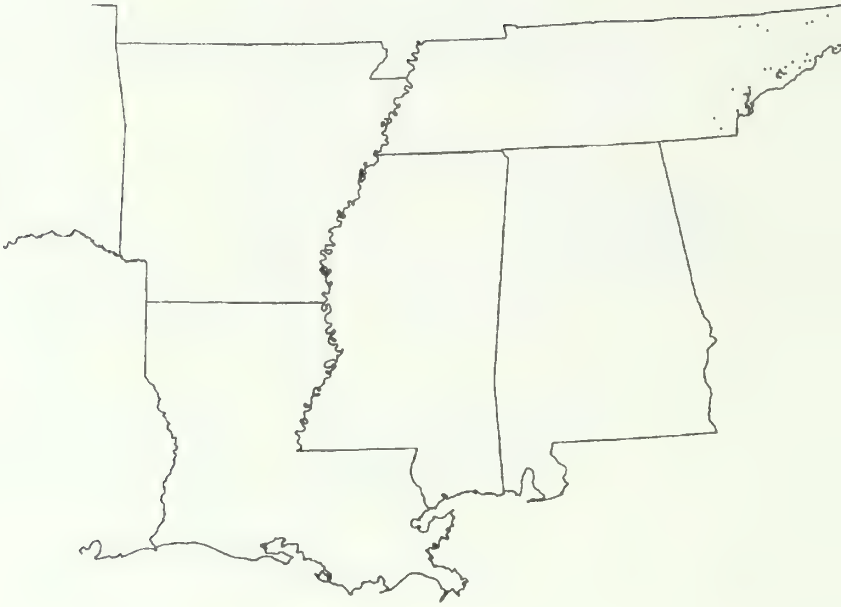
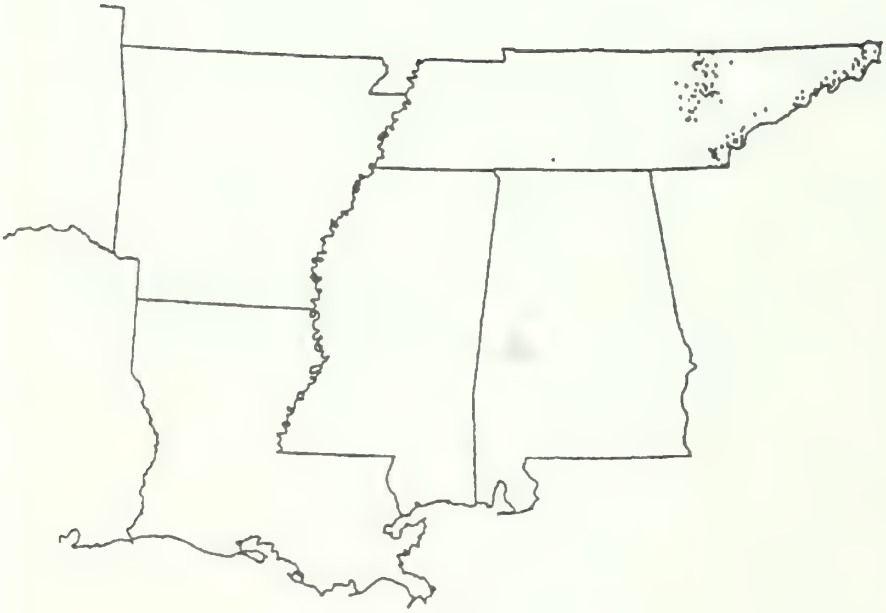


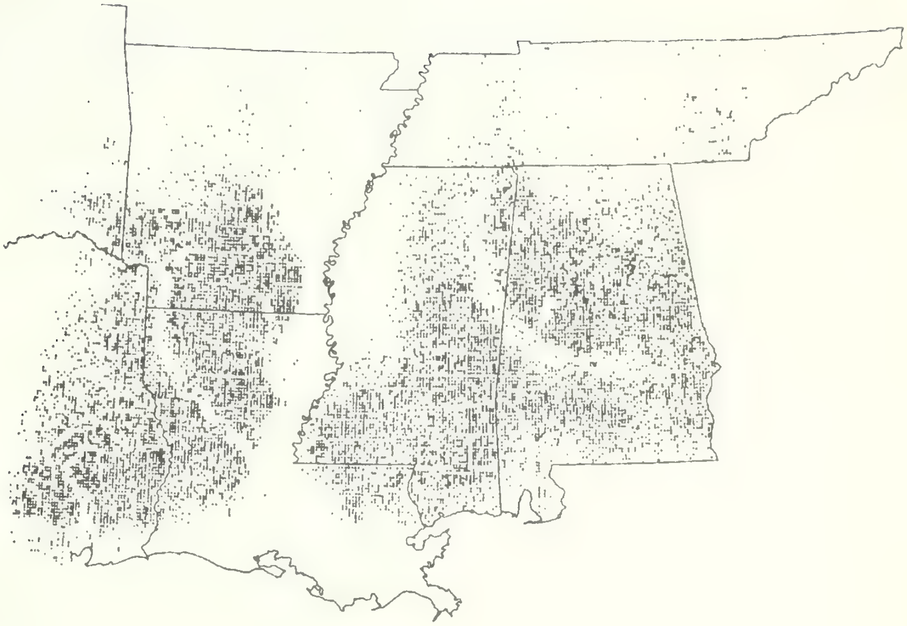
Table-mountain pine
(Pinus pungens)

Pitch pine
(Pinus rigida)

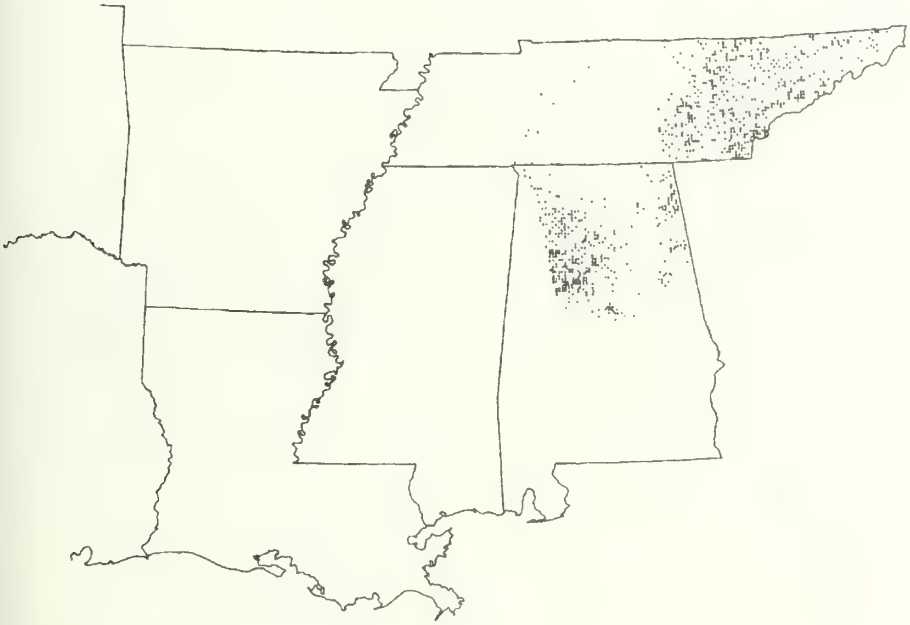




Eastern white pine
(Pinus strobus)

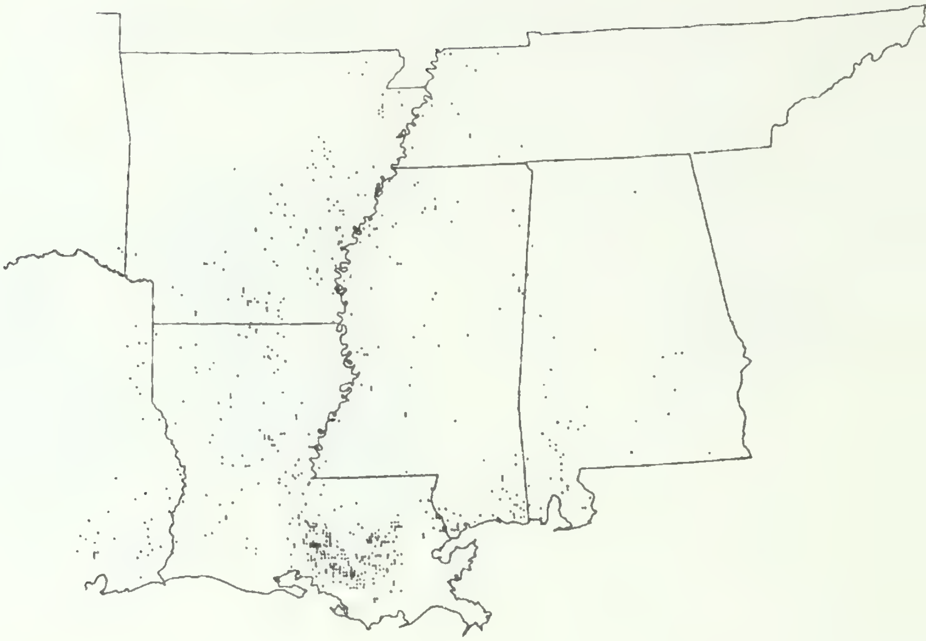


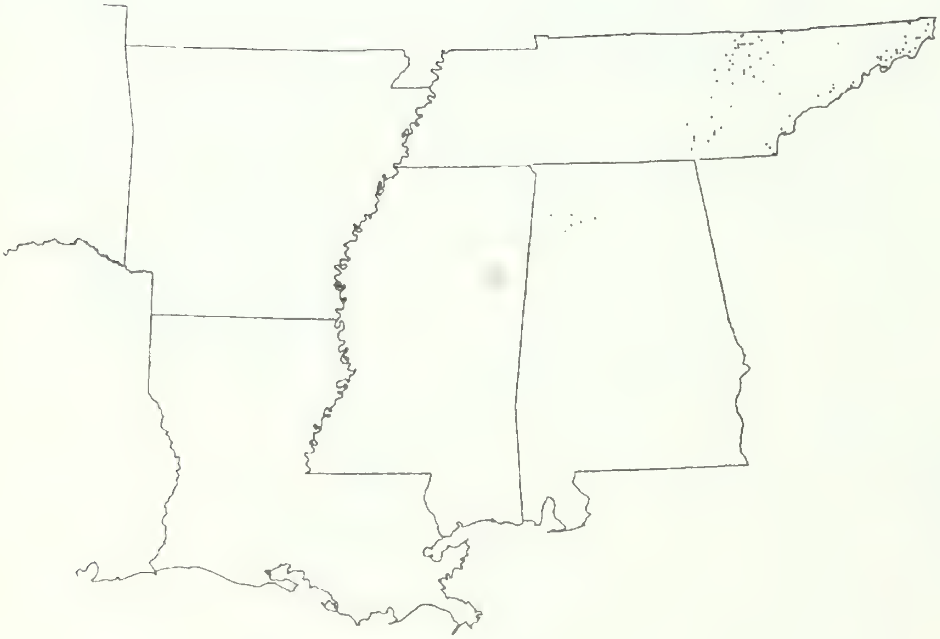
Loblolly pine
(Pinus taeda)



Virginia pine
(Pinus virginiana)

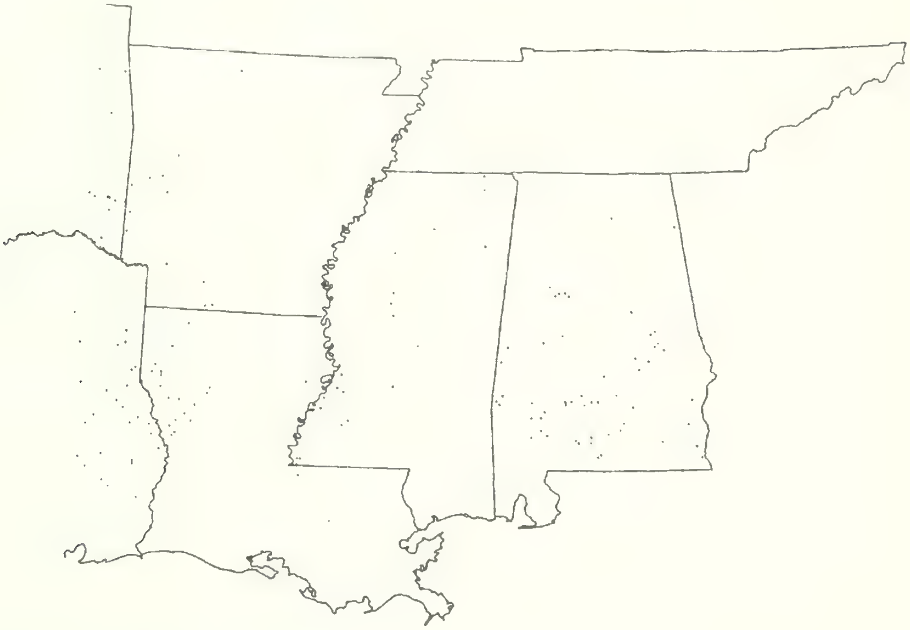
Cypress
(Taxodium spp.*)*

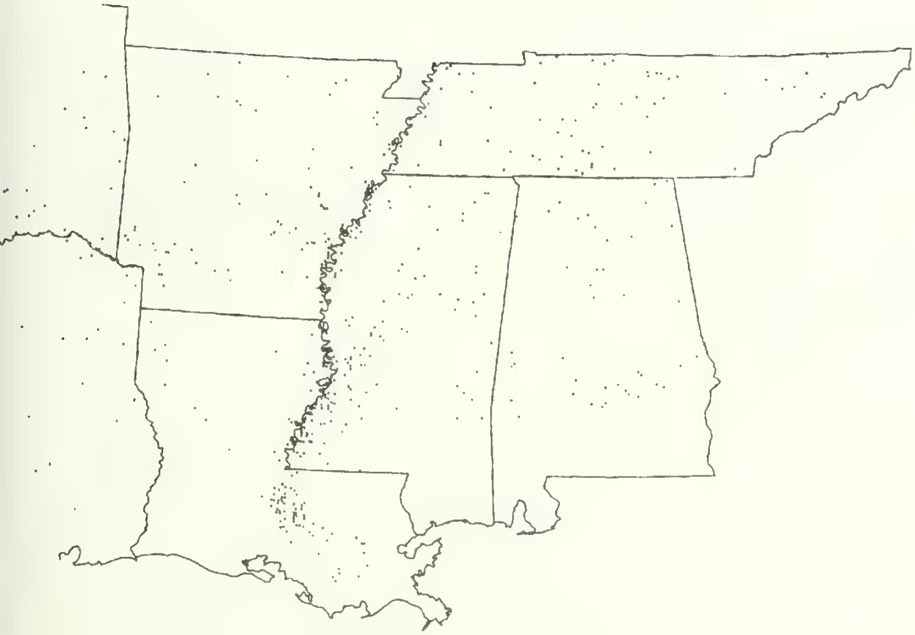




Eastern hemlock
(Tsuga canadensis)

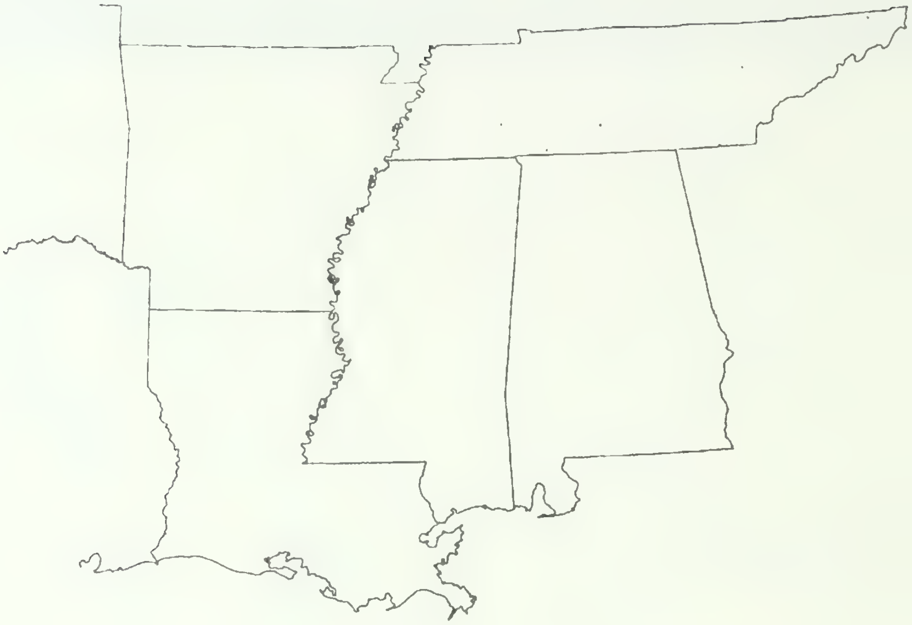
Florida maple
(Acer barbatum)

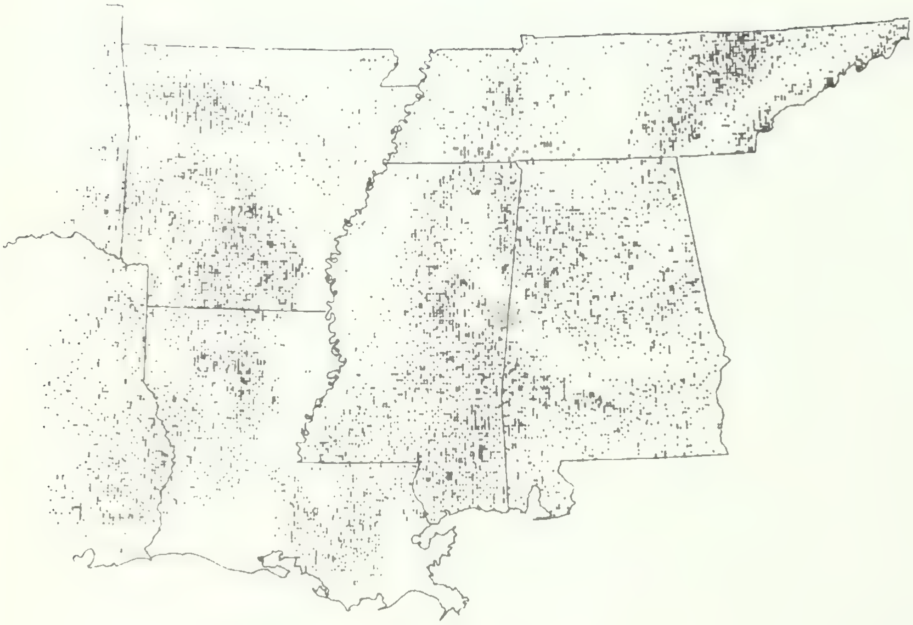




Boxelder
(Acer negundo)

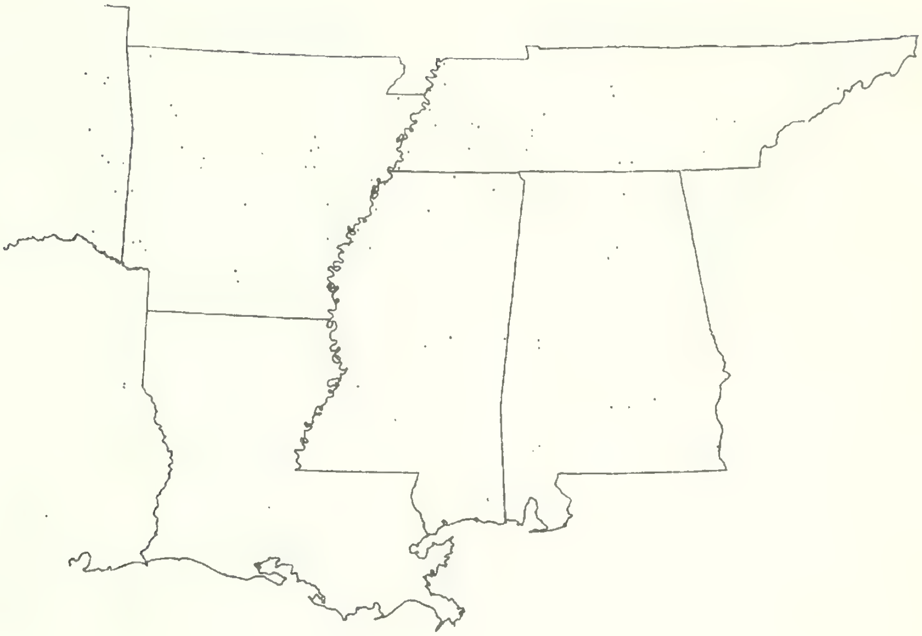
Black maple
(Acer nigrum)

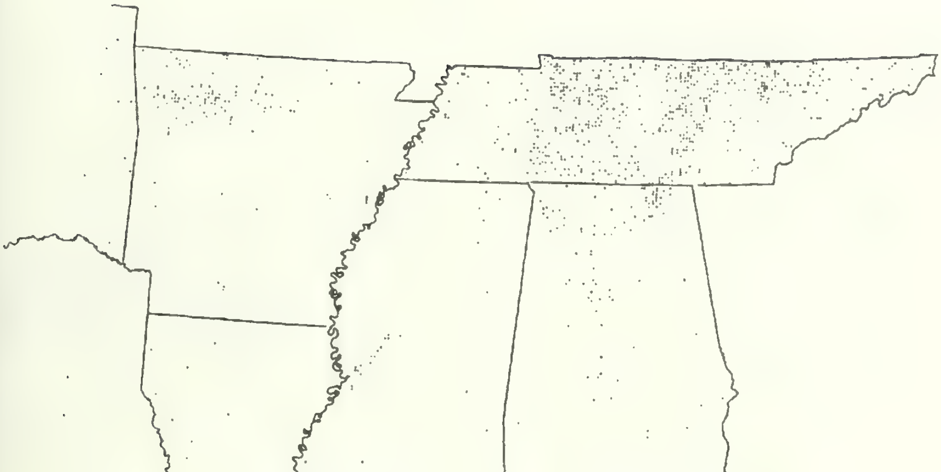




Red maple
(Acer rubrum)

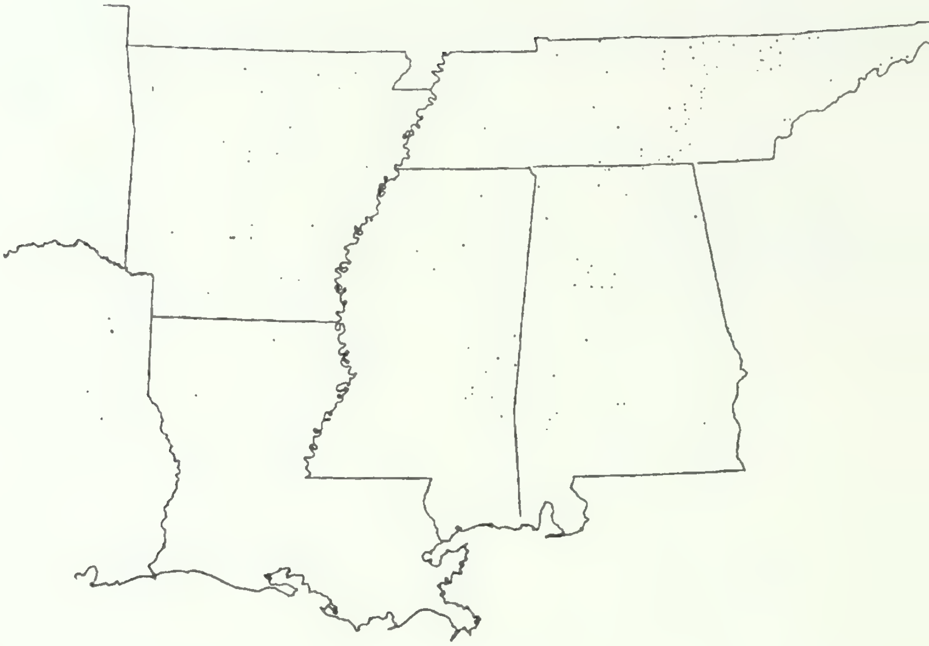
Silver maple
(Acer saccharinum)



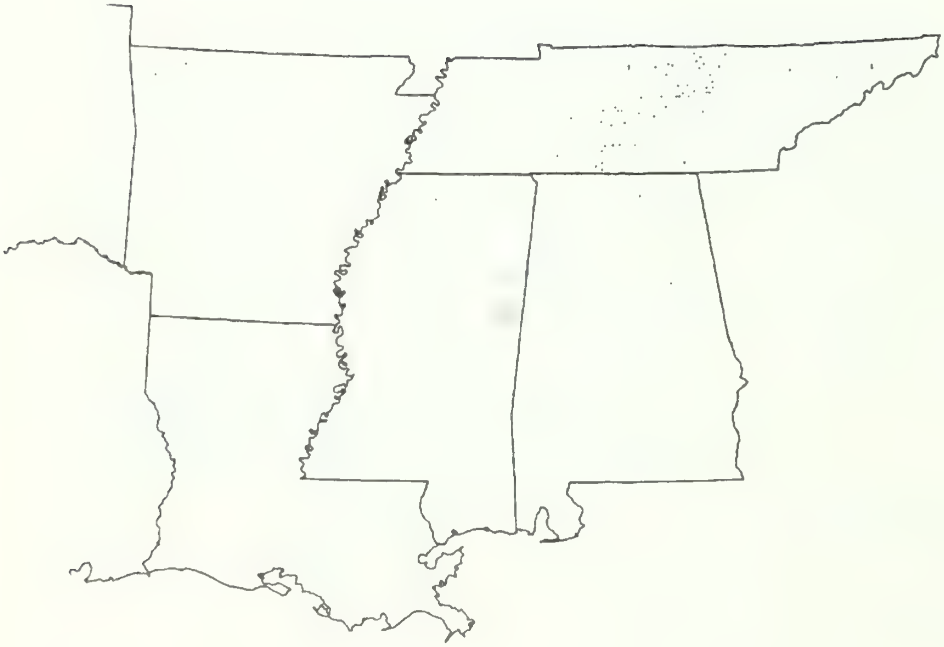


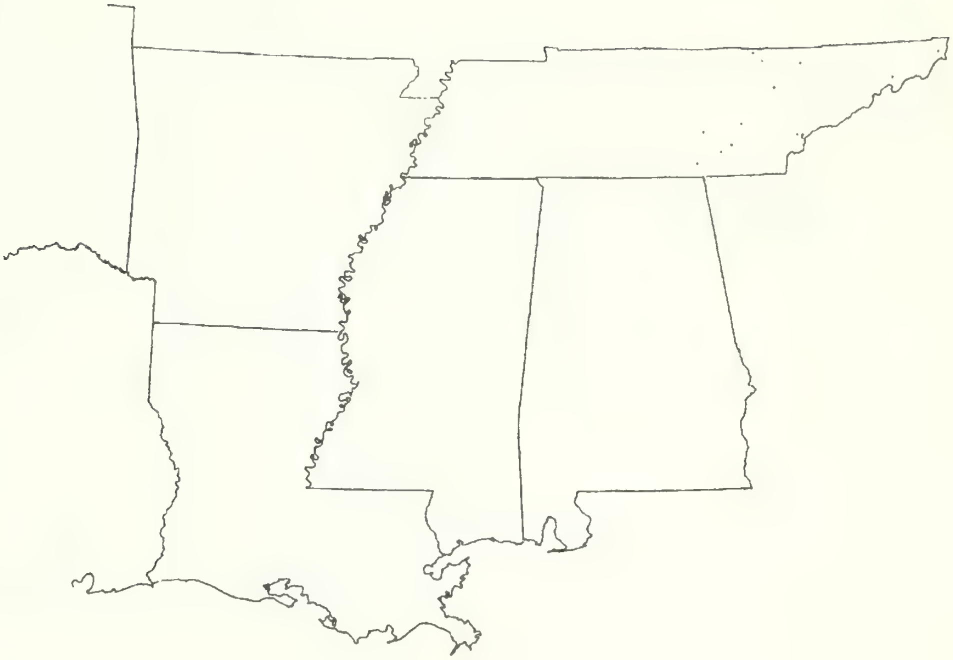
Sugar maple
(Acer saccharum)

Buckeyes
(Aesculus spp.*)*

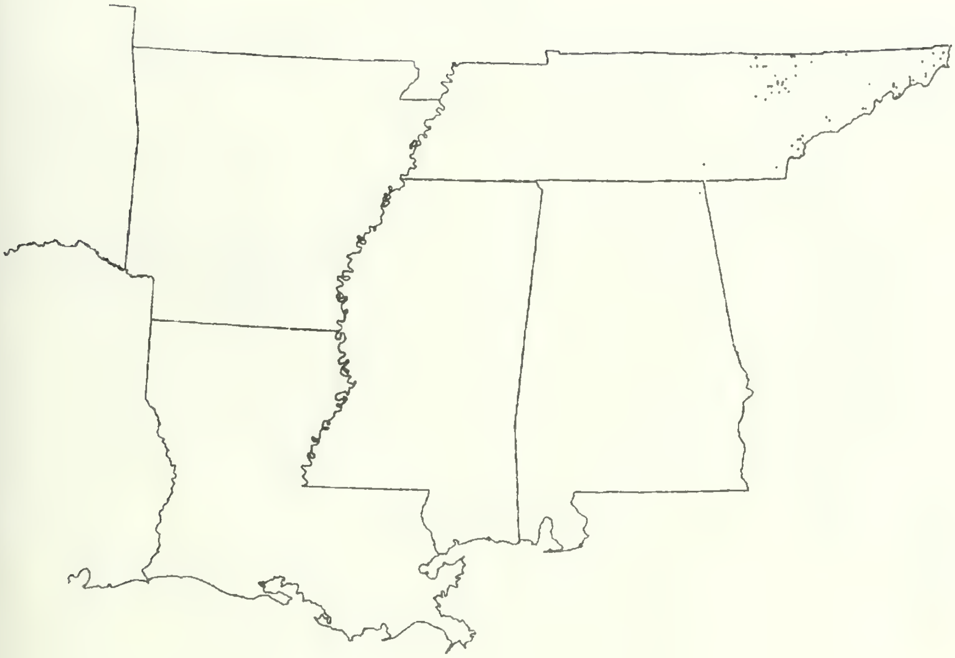


Tree-of-heaven
(Ailanthus altissima)



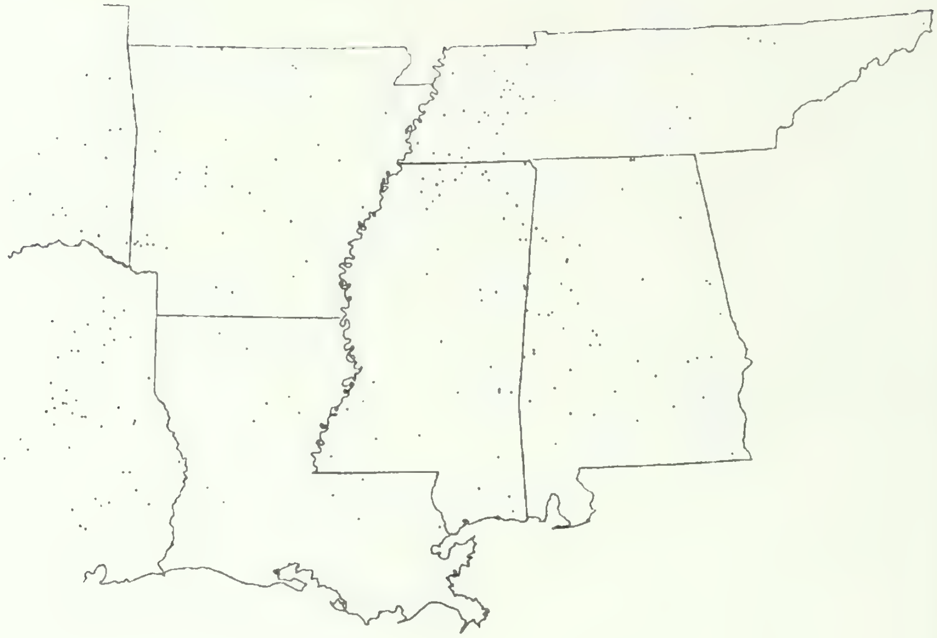


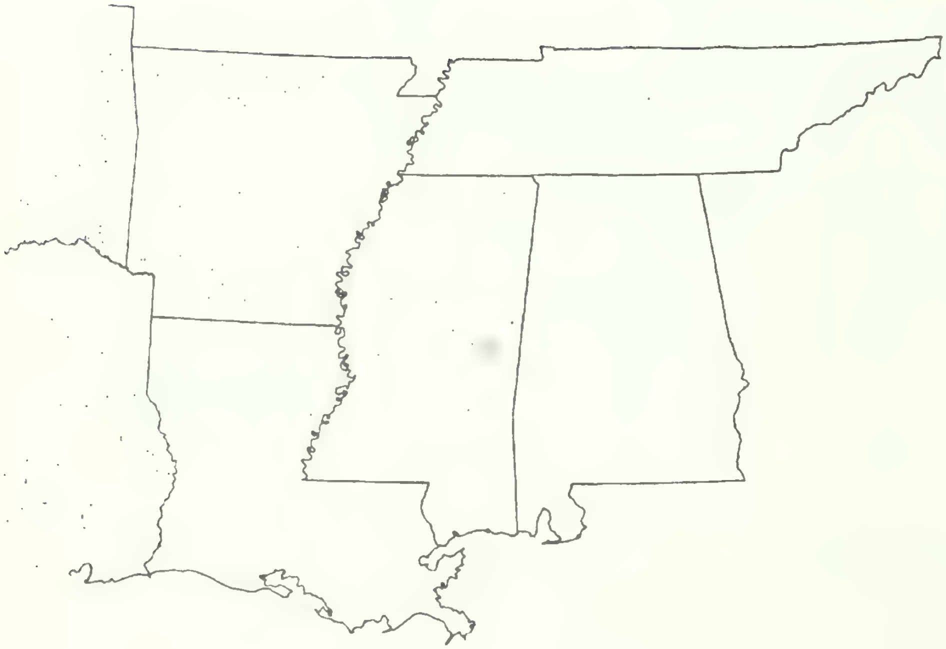
Yellow birch
(Betula alleghaniensis)



Sweet birch
(Betula lenta)

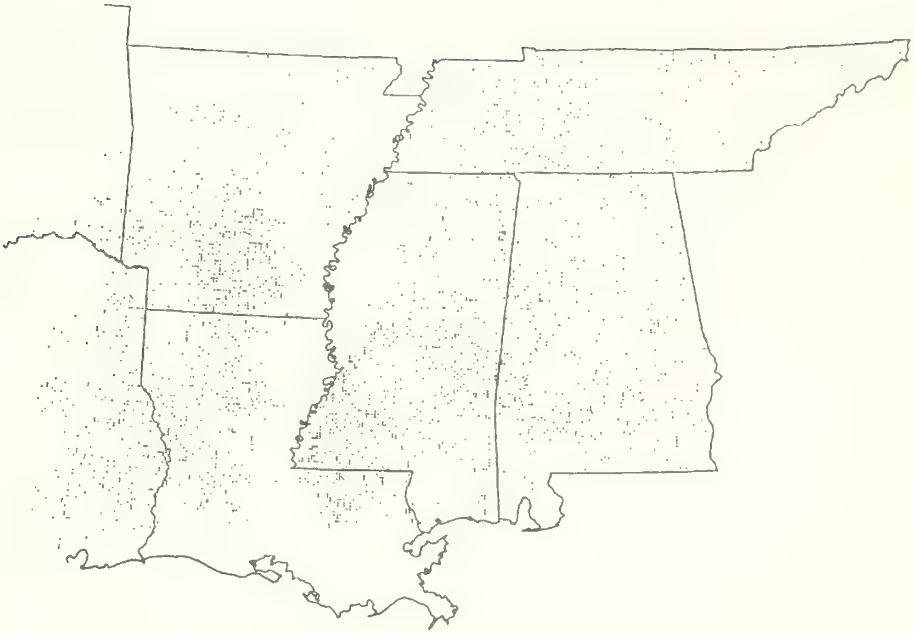
River birch
(Betula nigra)

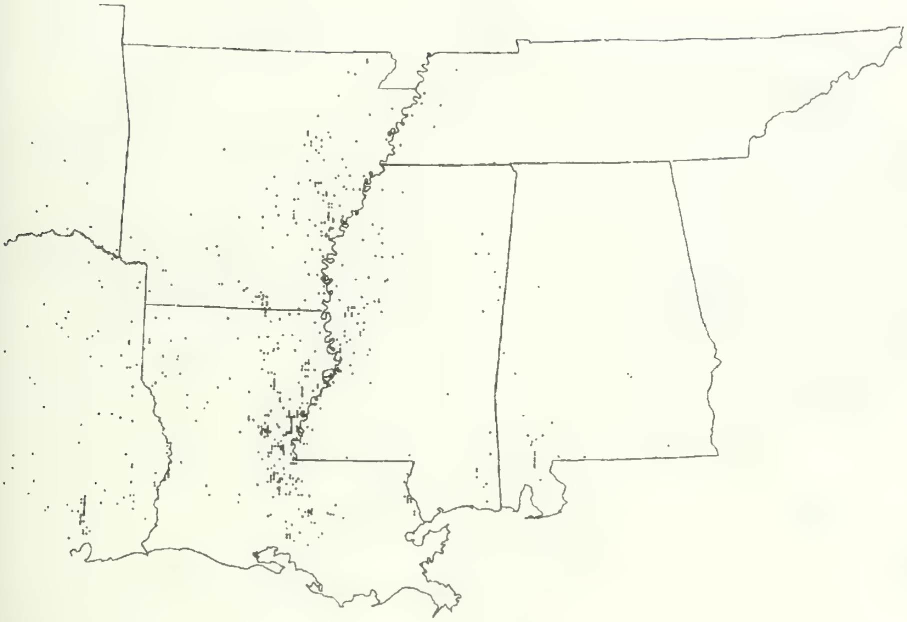




Bumelia, chittamwood
(Bumelia spp.)

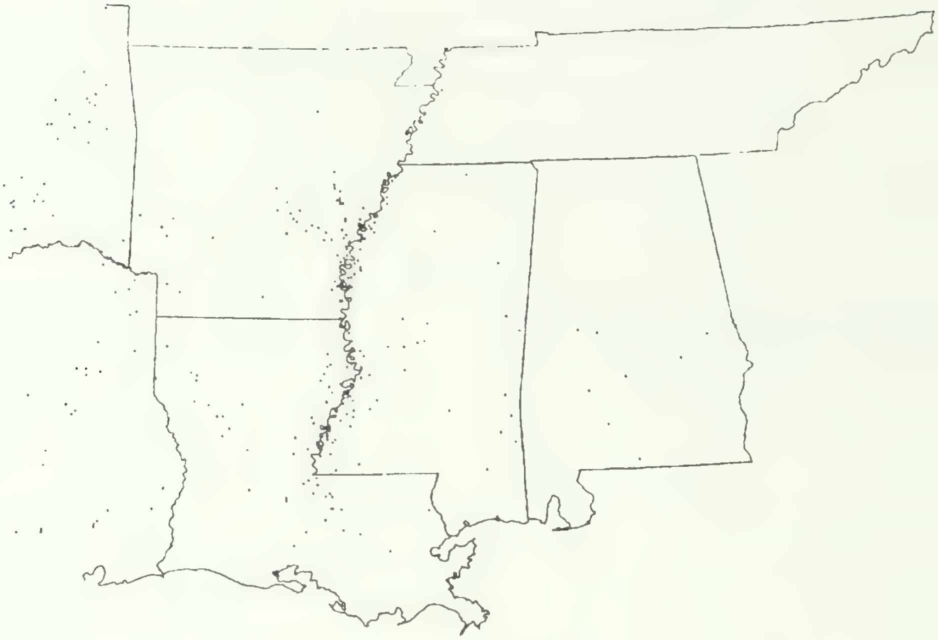
Bluebeech, American hornbeam
(Carpinus caroliniana)

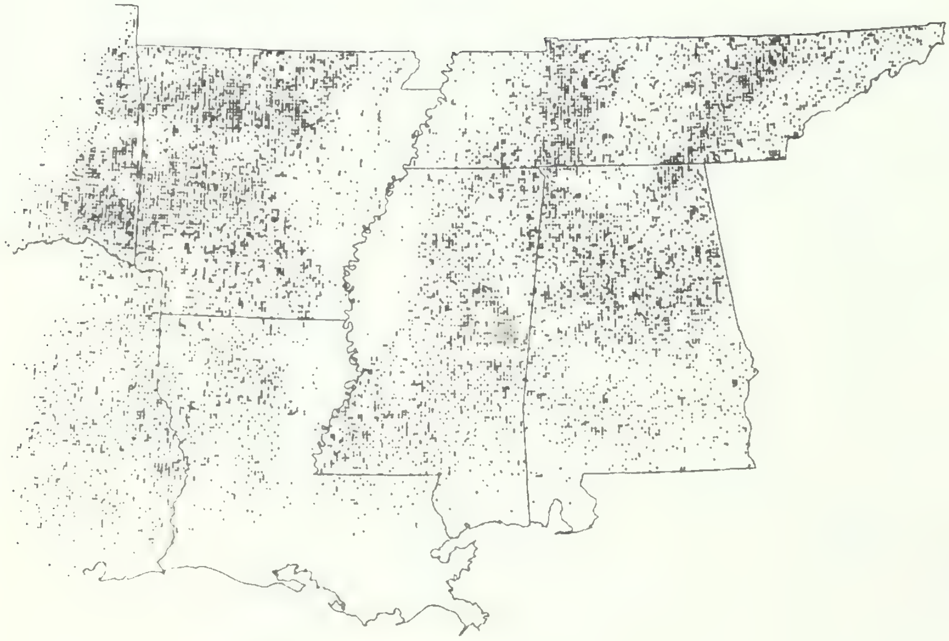




Water hickory
(Carya aquatica)

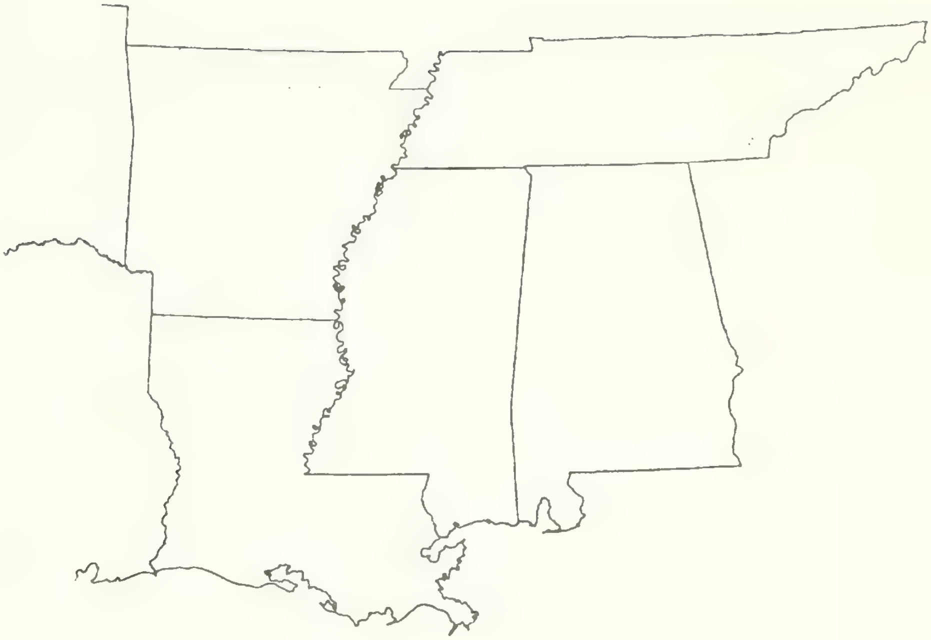
Pecan
(Carya illinoensis)

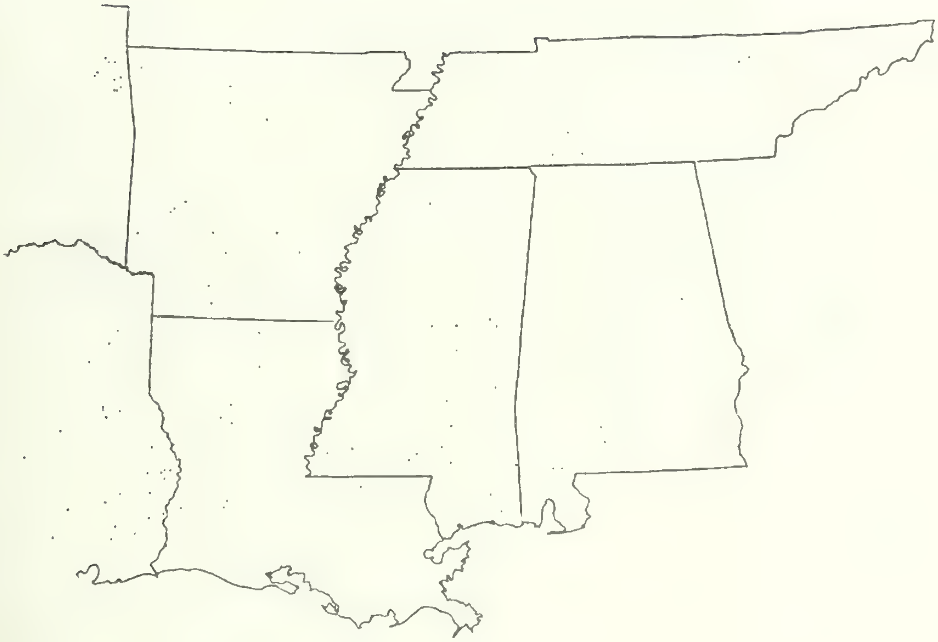




Hickory
(Carya spp.)

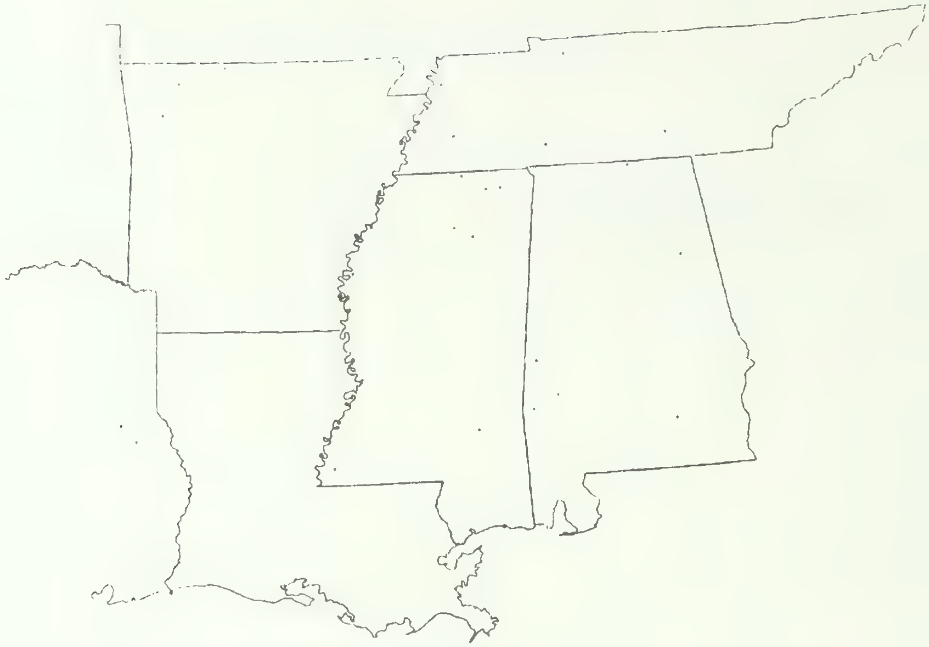
American Chestnut
(Castanea dentata)

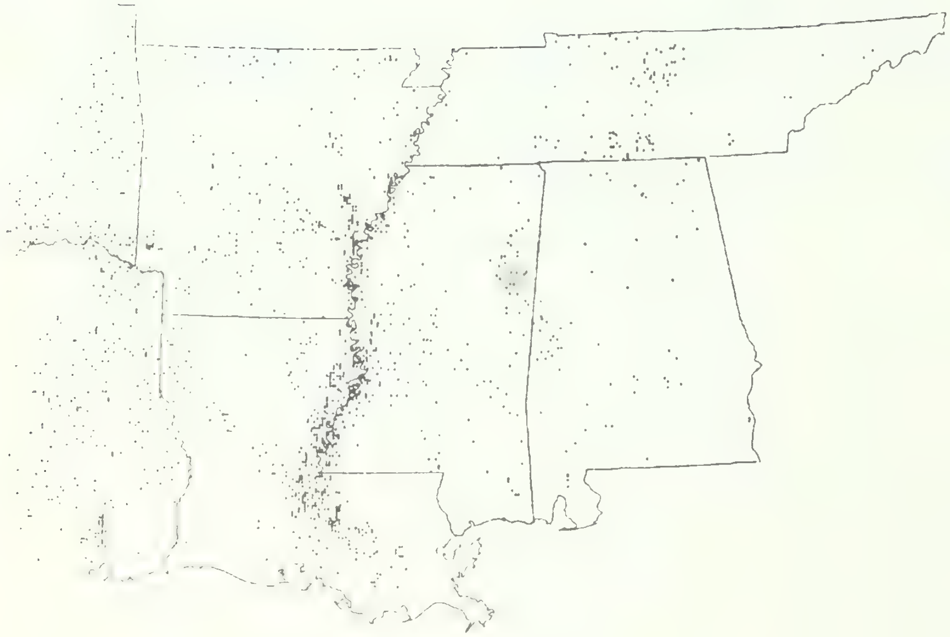




Chinkapin
(Castanea spp.)

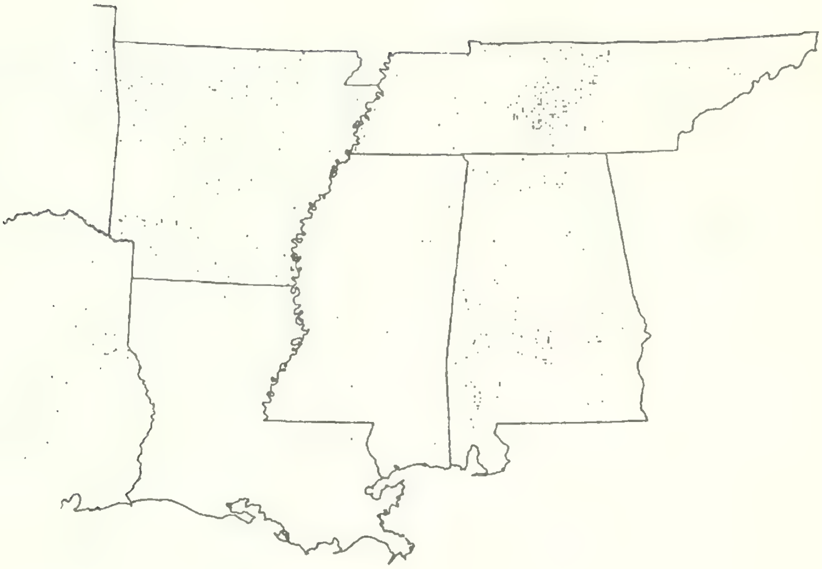
Catalpa
(Catalpa spp.)

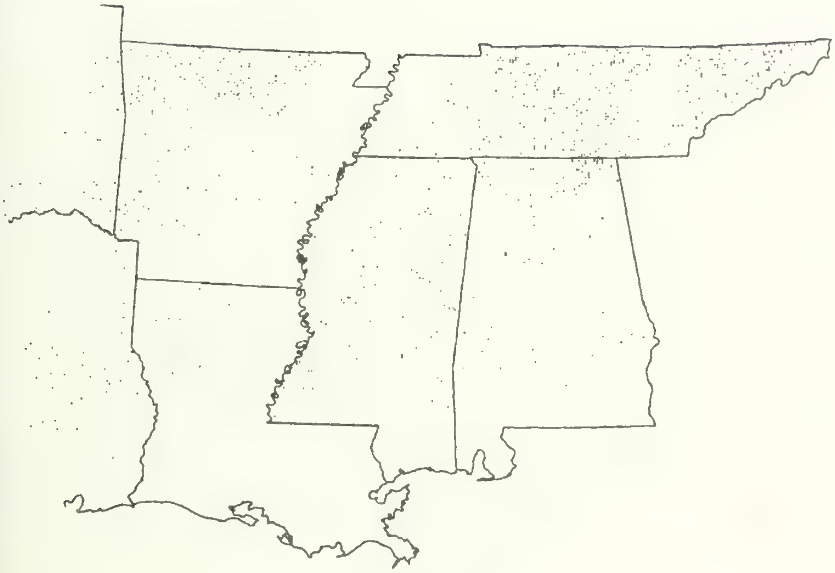




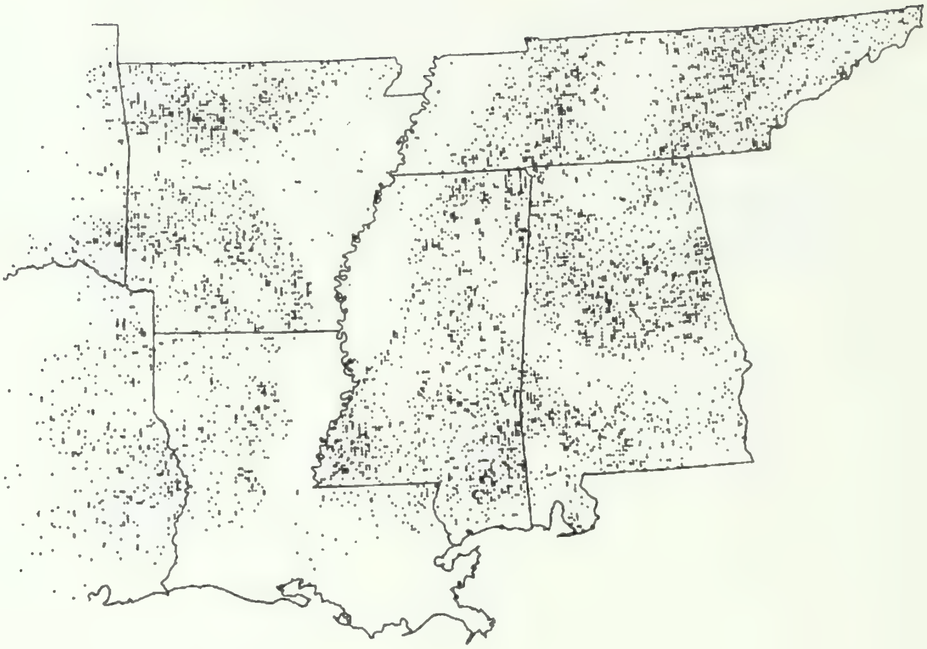
Sugarberry
(Celtis laevigata.)

Hackberry
(Celtis occidentalis)

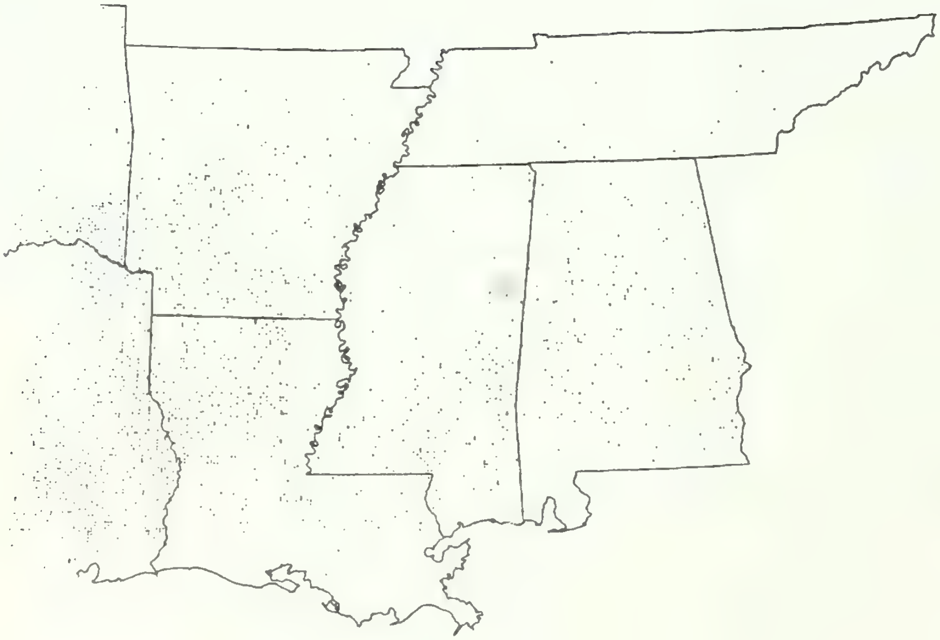




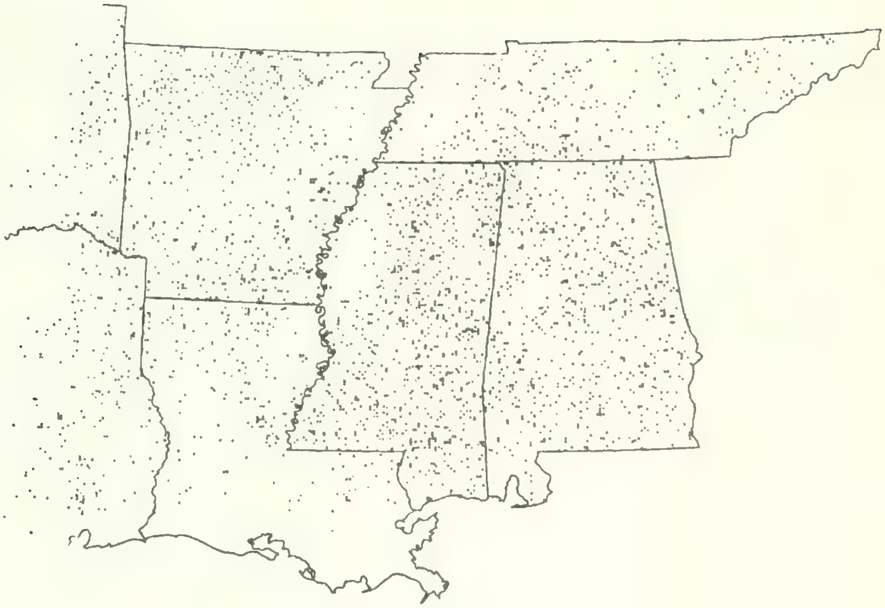
Eastern redbud
(Cercis canadensis)



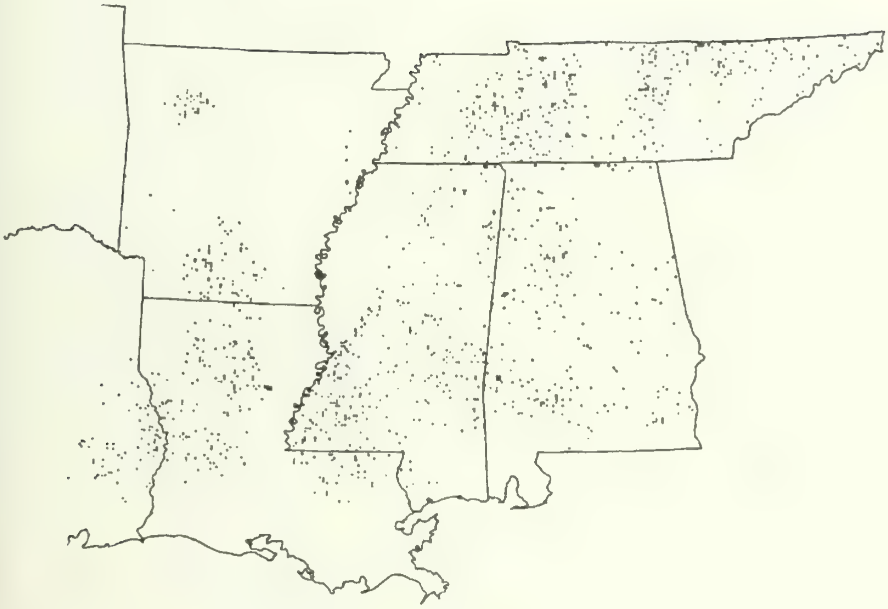
Flowering dogwood
(Cornus florida)



Hawthorn
(Crataegus spp.)

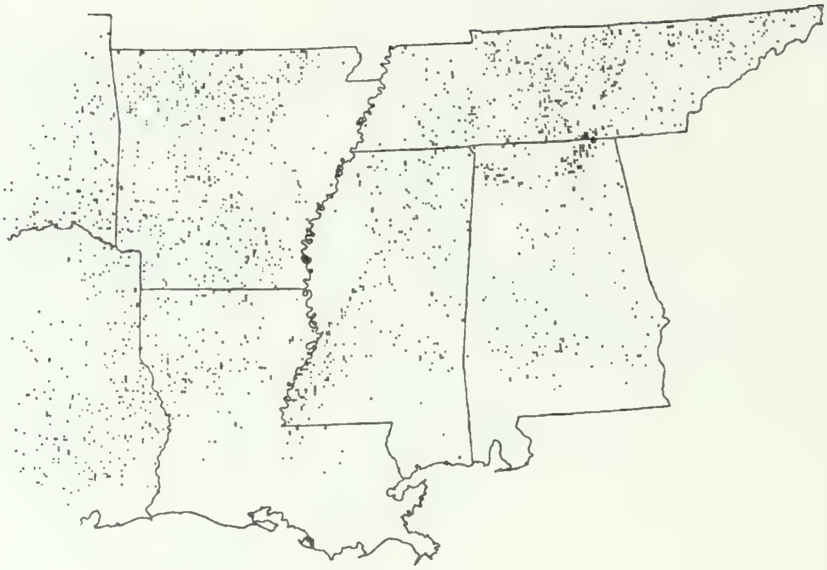


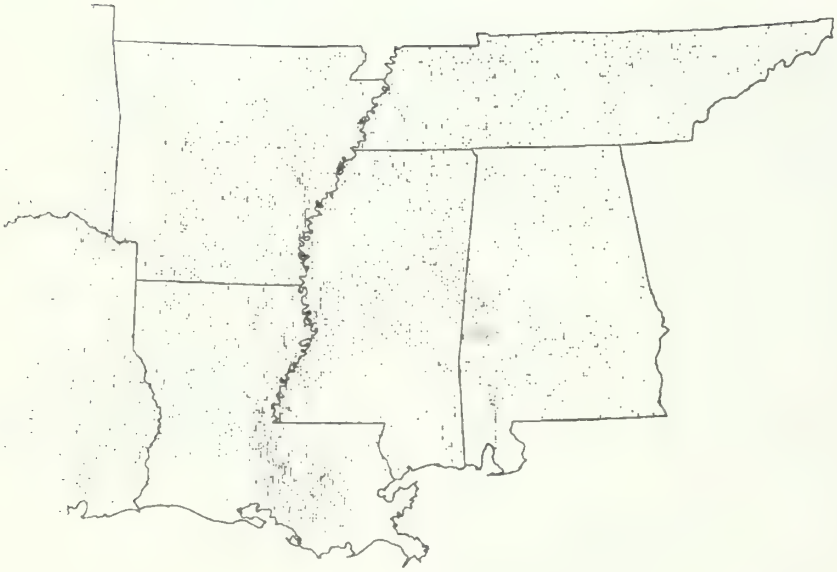
Common persimmon
(Diospyros virginiana)



American beech
(Fagus grandifolia)

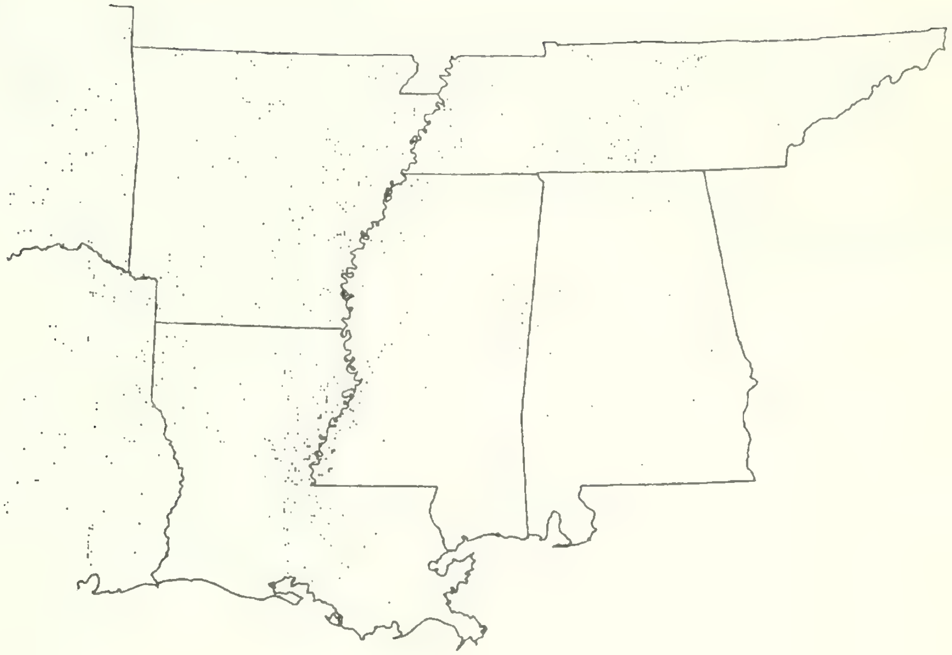
White ash
(Fraxinus americana)

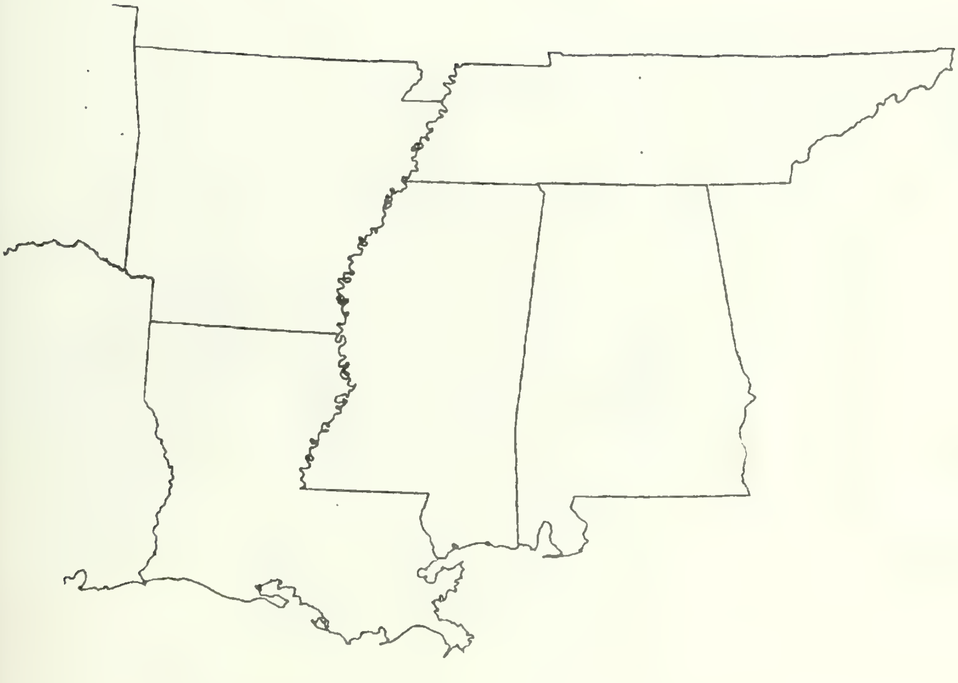




Green ash
(Fraxinus pennsylvanica)

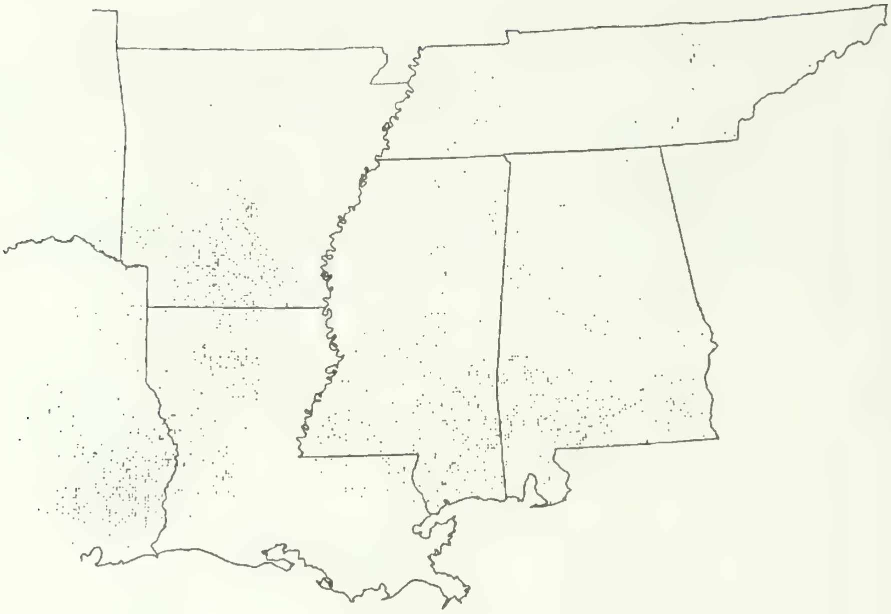
Locust
(Gleditsia spp.)

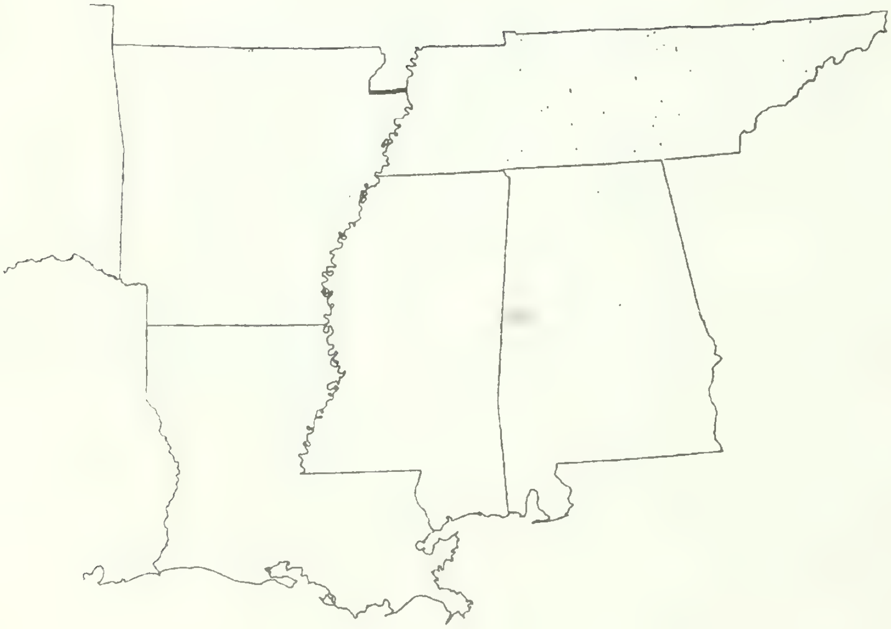




Kentucky coffeetree
(Gymnocladus dioicus)

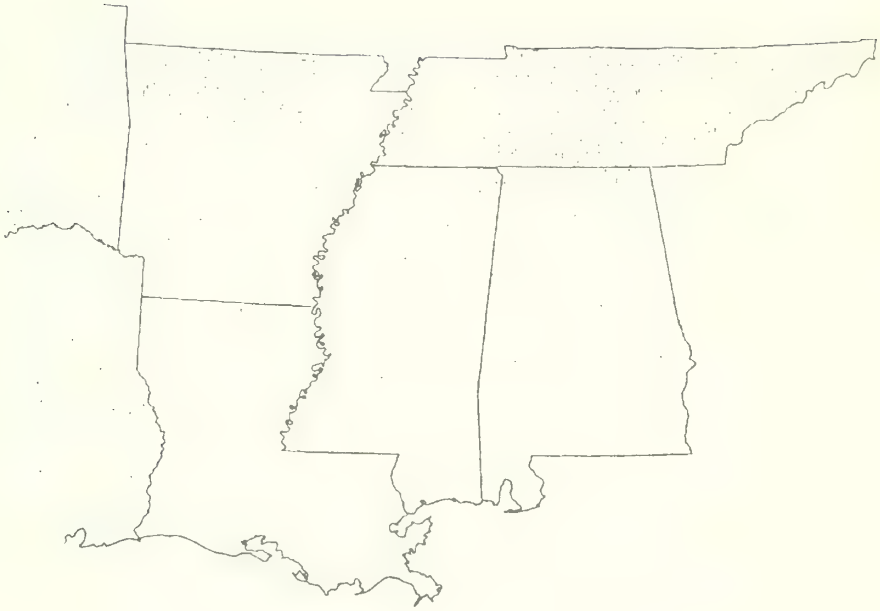
American holly
(Ilex opaca)

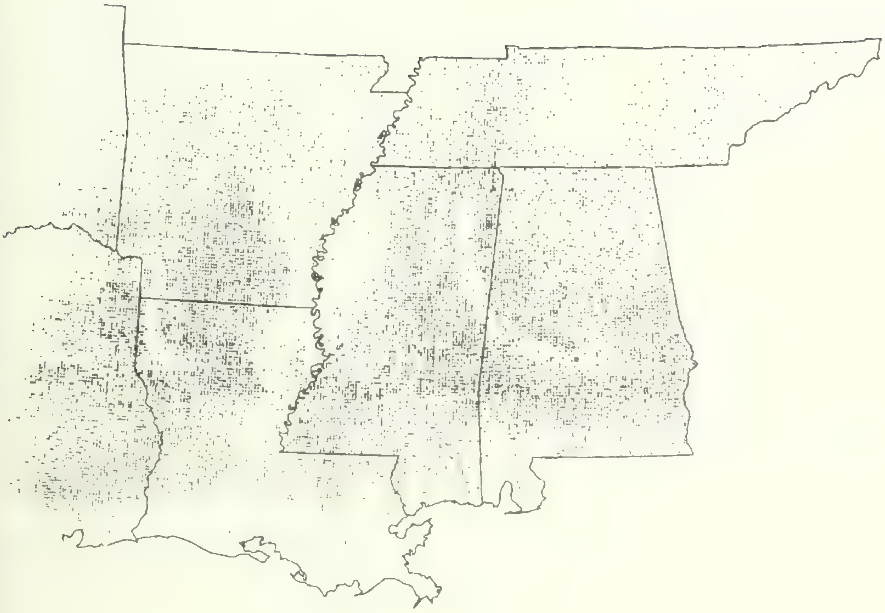




Butternut
(Juglans cinerea)

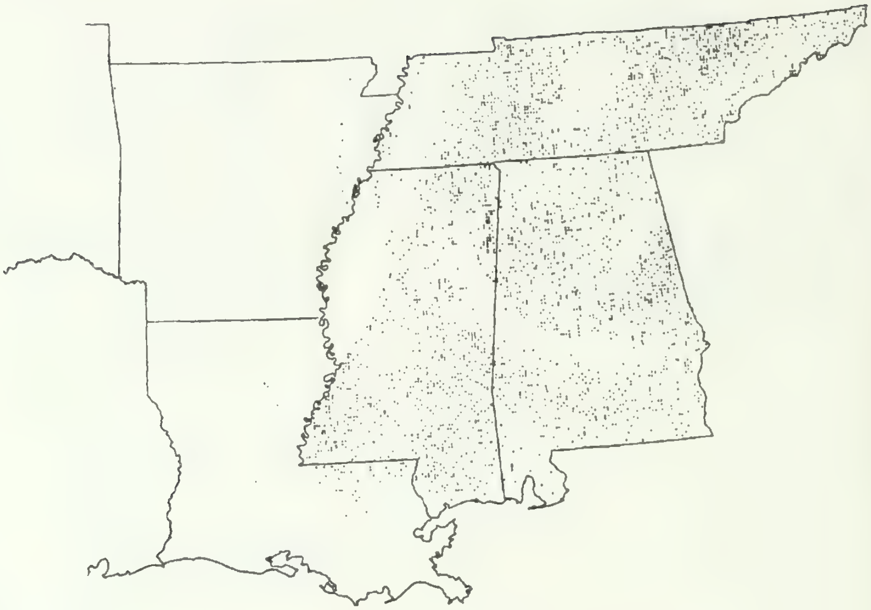
Black walnut
(Juglans nigra)

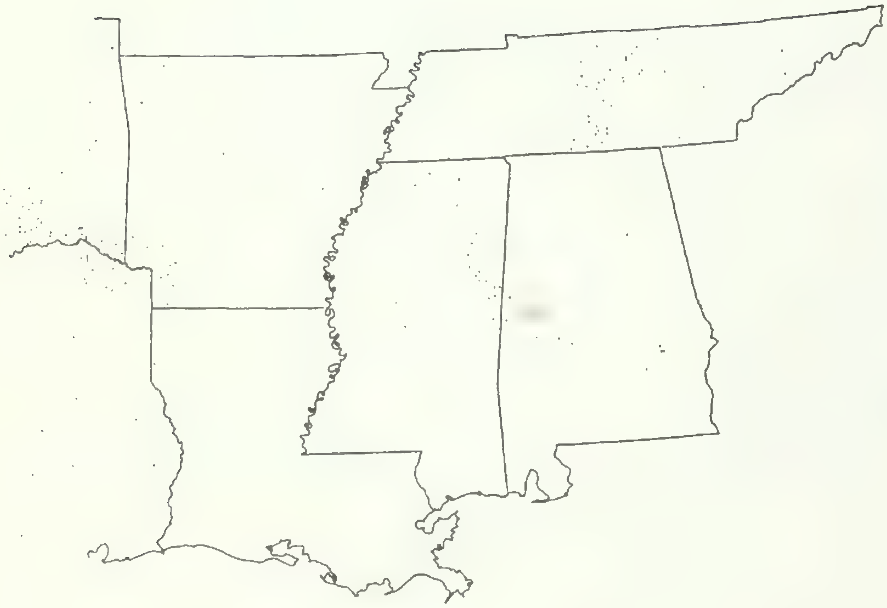




Sweetgum
(Liquidambar styraciflua)

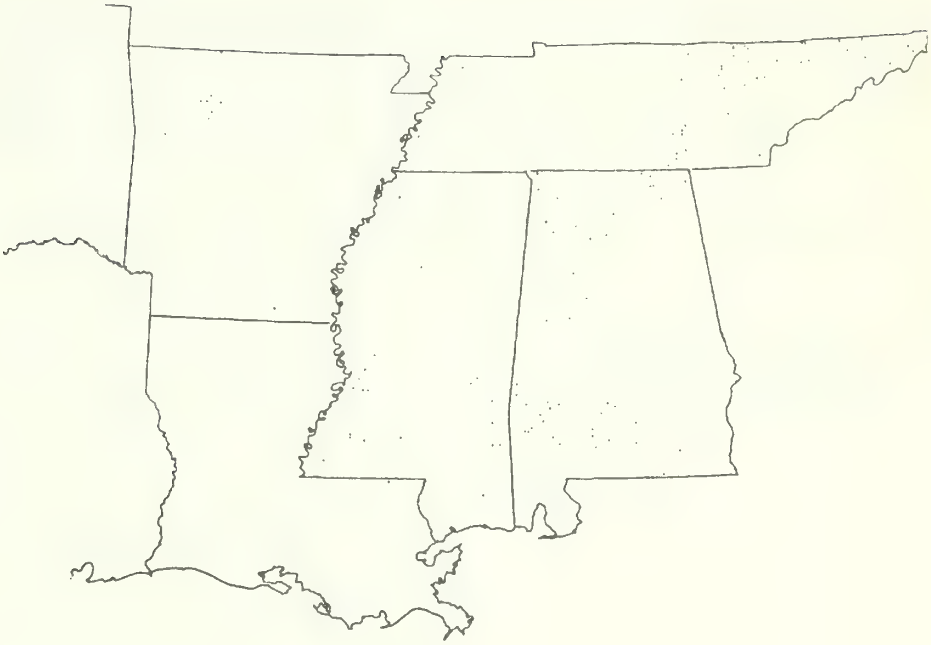
Yellow-poplar
(Liriodendron tulipifera)

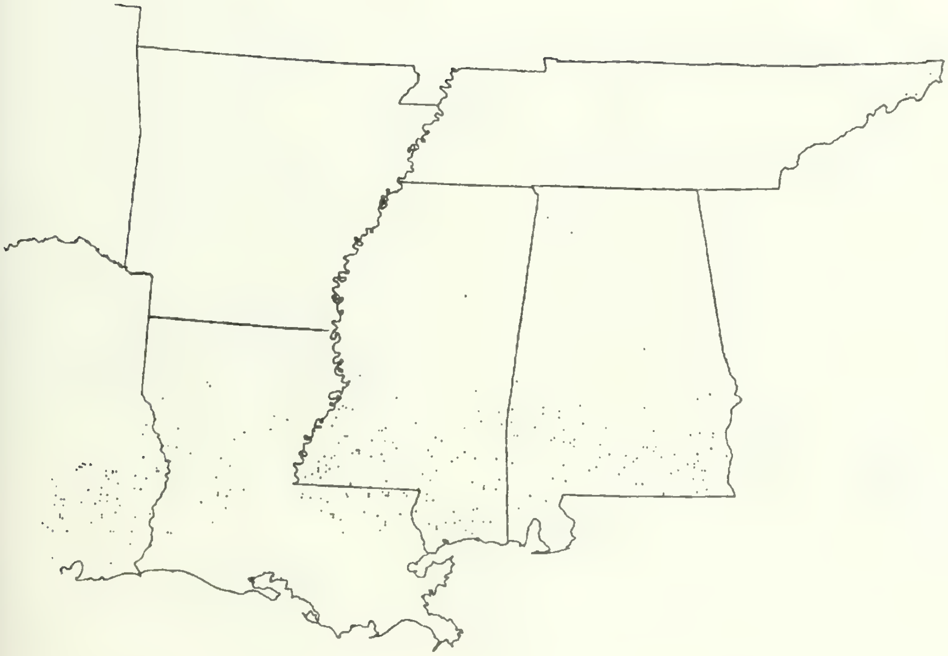




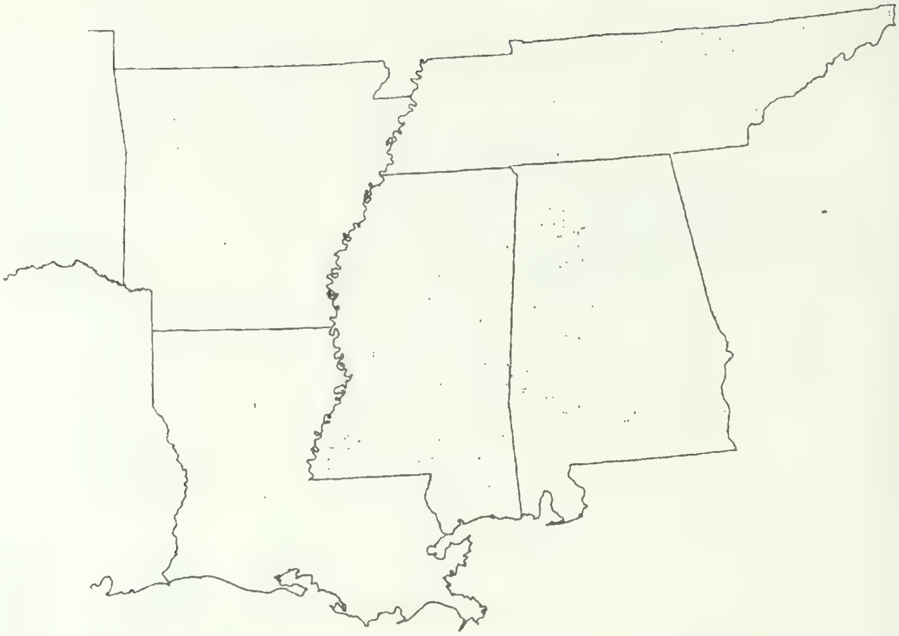
Osage-orange
(Maclura pomifera)

Cucumbertree
(Magnolia acuminata)

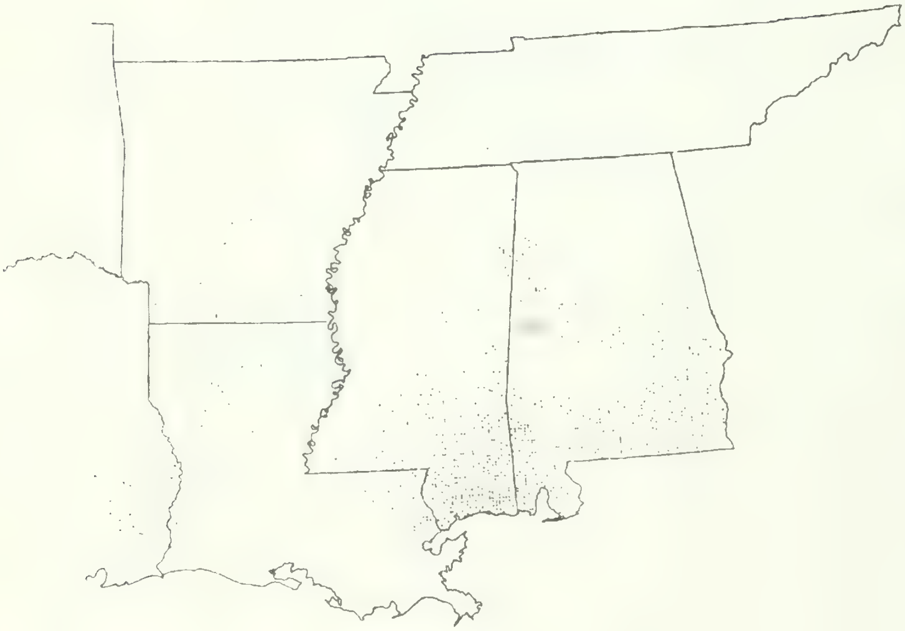




Southern Magnolia
(Magnolia grandiflora)

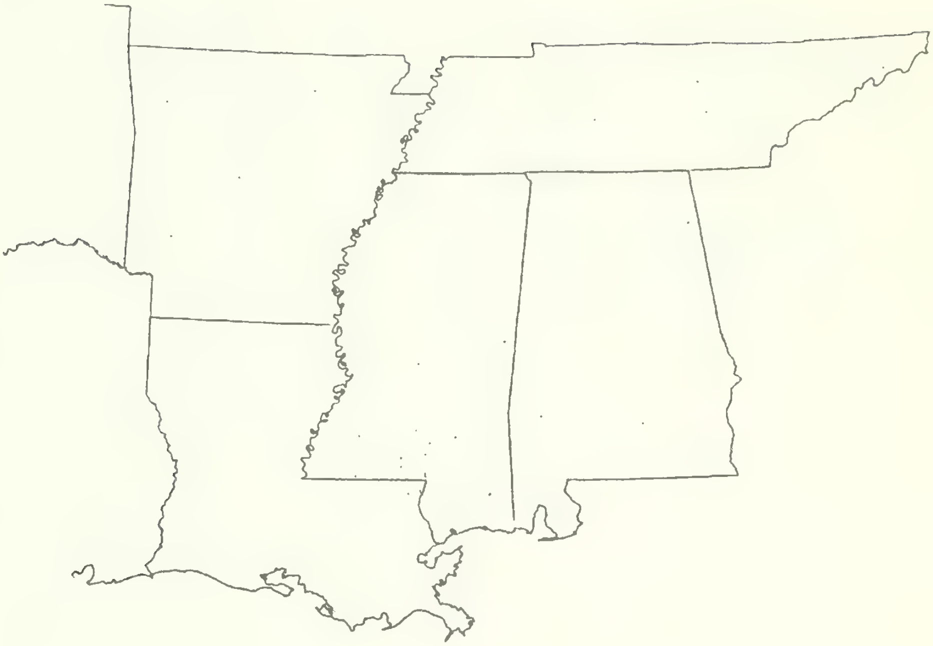


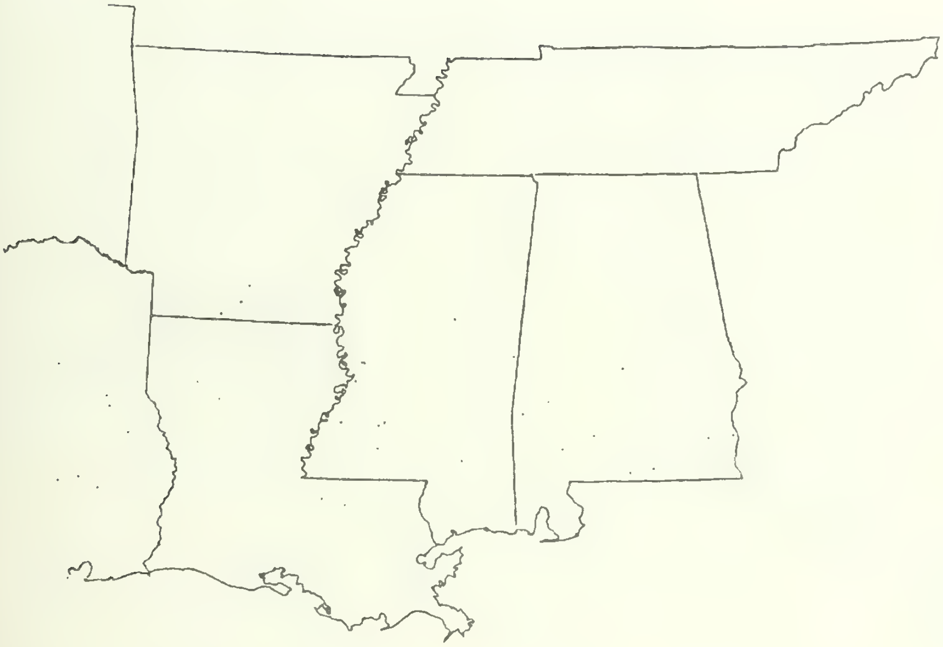
Bigleaf magnolia
(Magnolia macrophylla)



Sweetbay
(Magnolia virginiana)

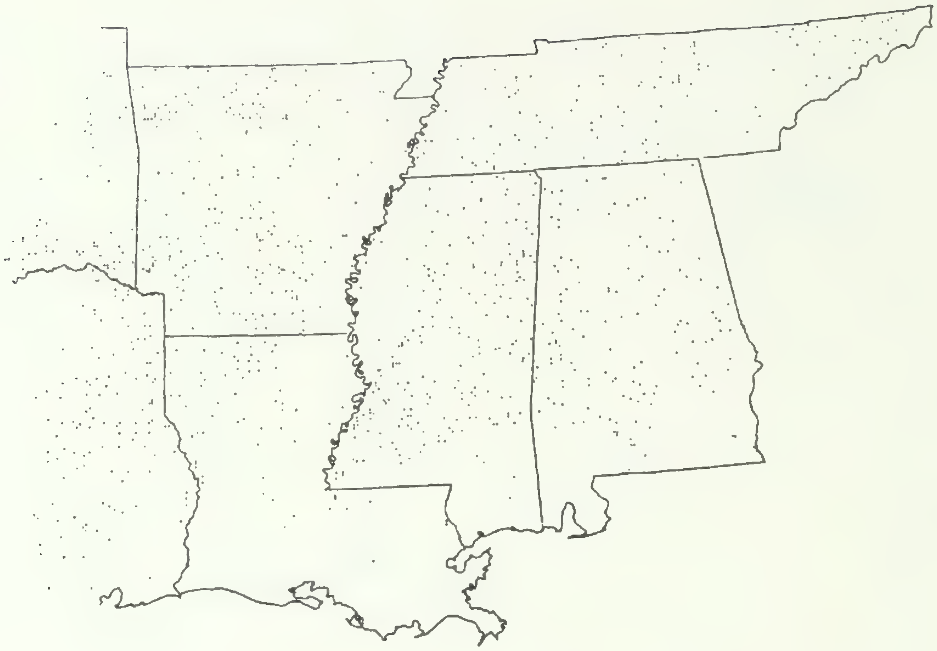
Apple
(Malus spp.*)*

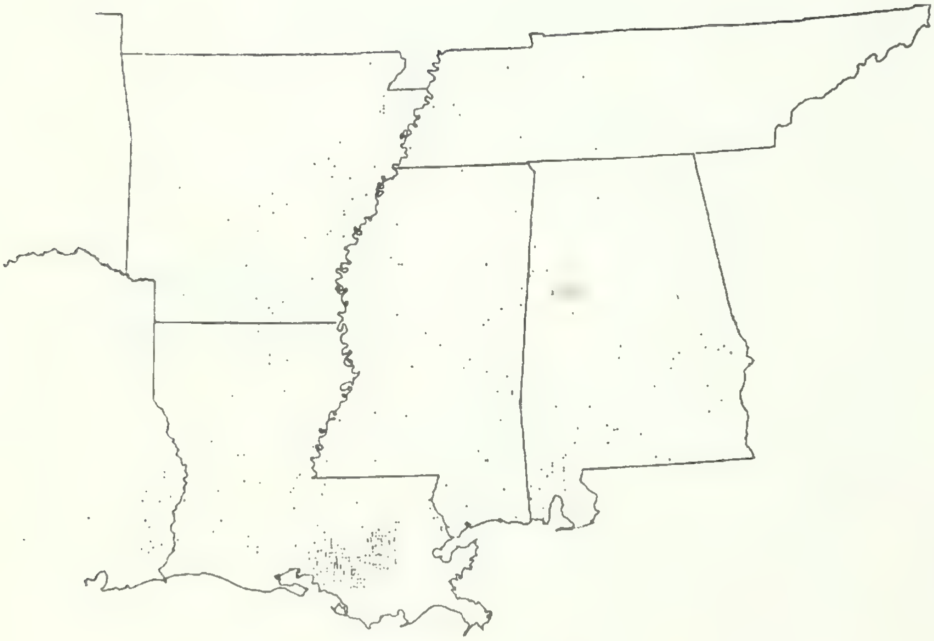




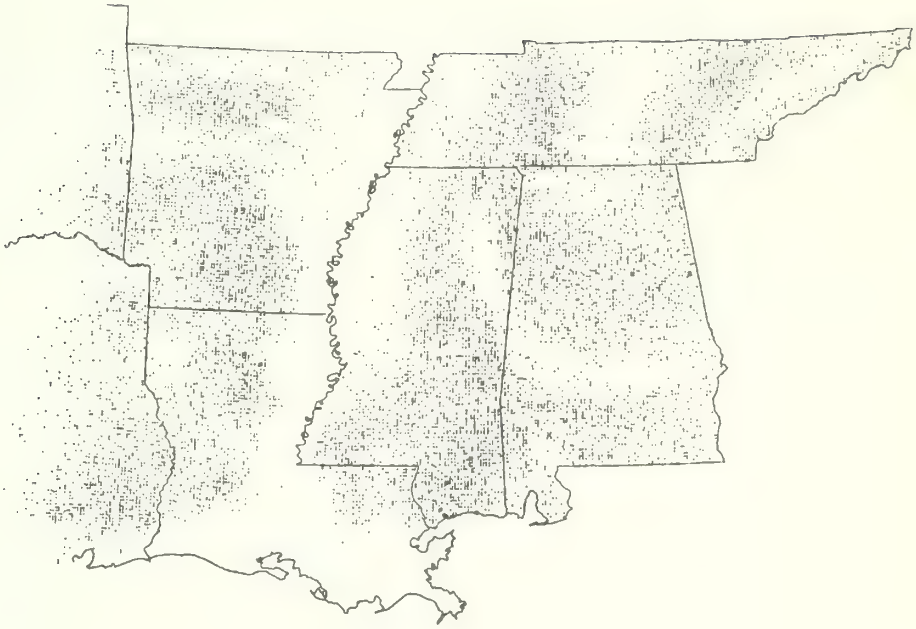
Chinaberry
(Melia azedarach)

Mulberry
(Morus spp.)

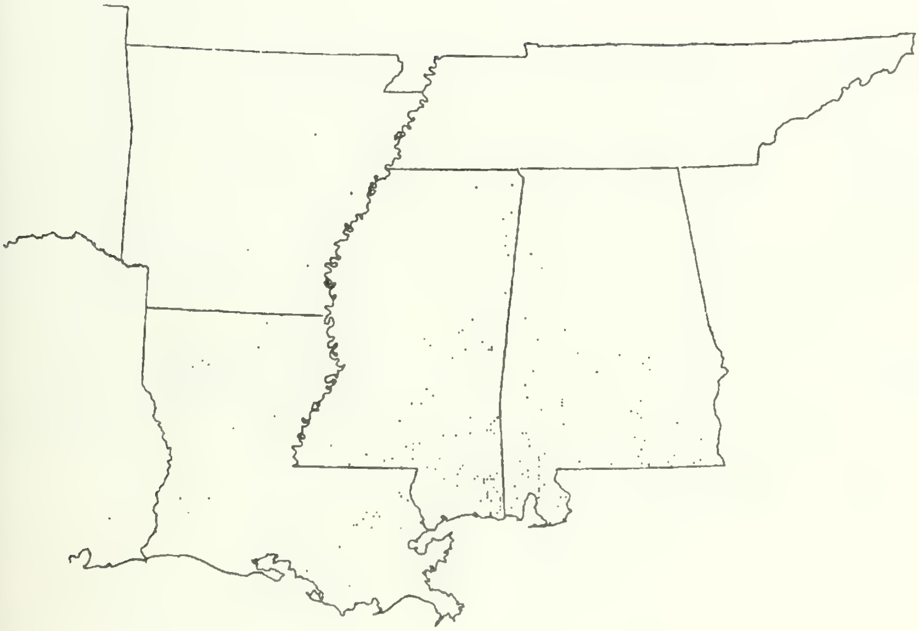




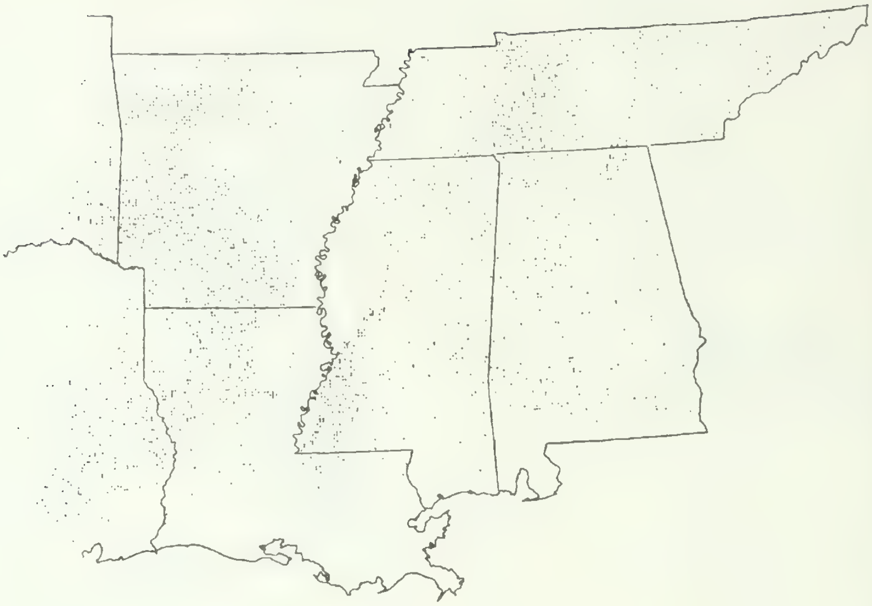
Water tupelo
(Nyssa aquatica)



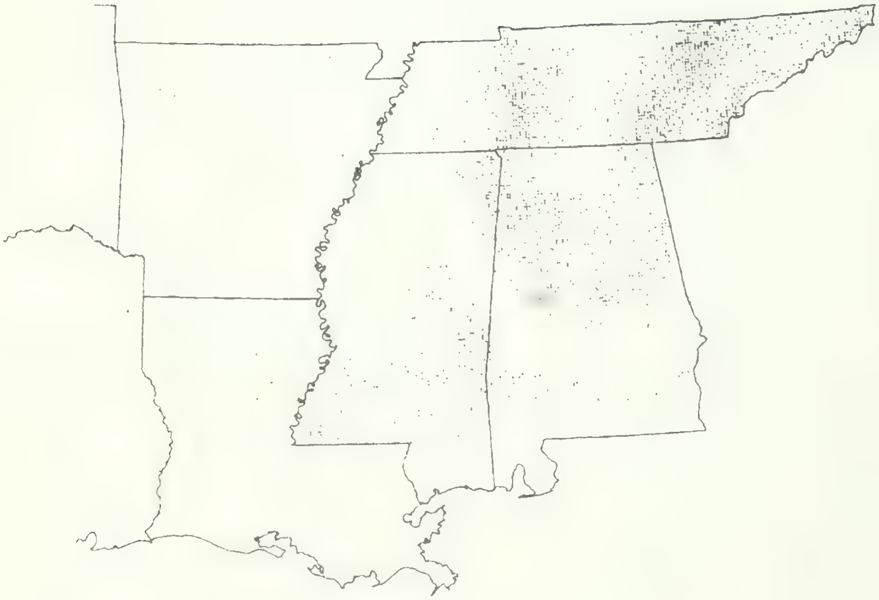
Blackgum
(Nyssa sylvatica)



Swamp tupelo
(Nyssa sylvatica var. biflora)

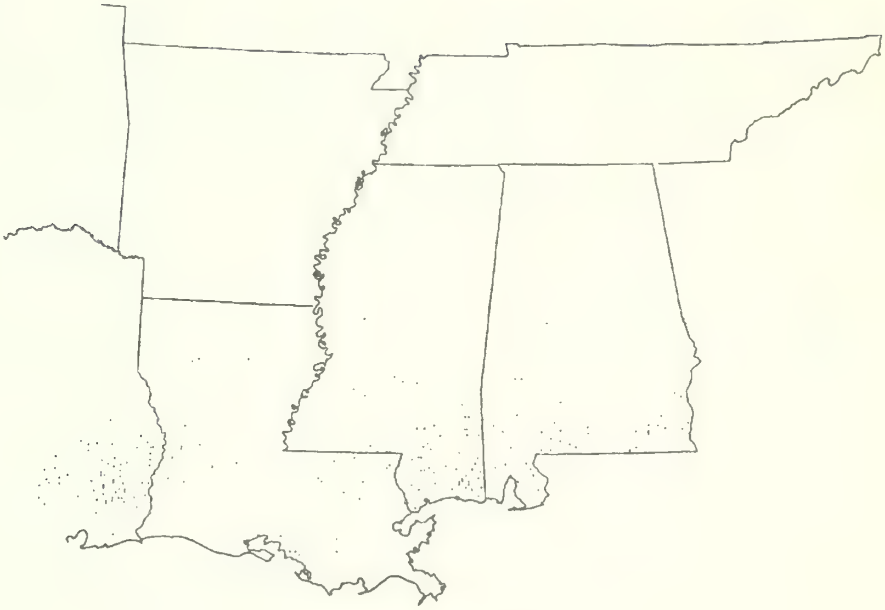


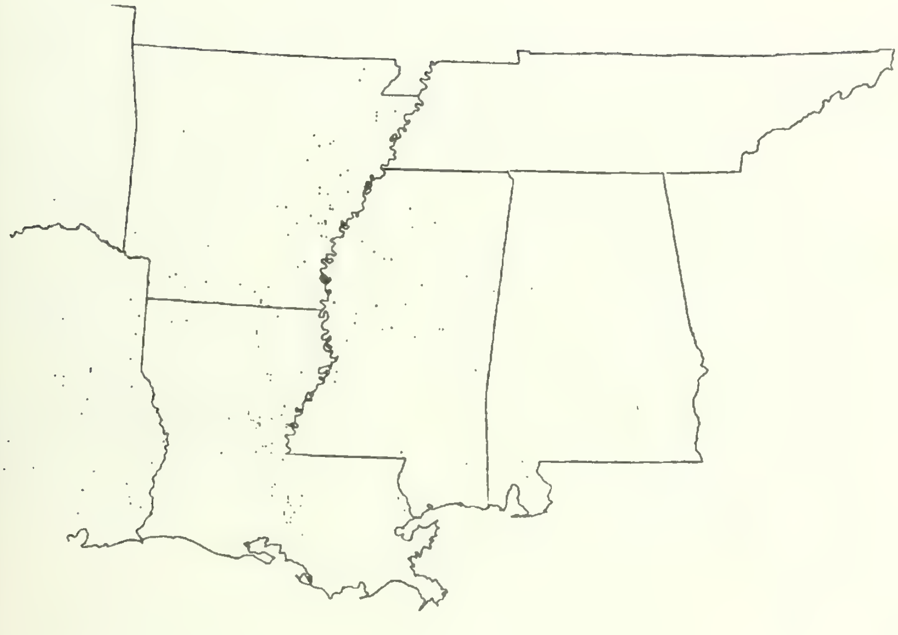
Ironwood
(Ostrya virginiana)



Sourwood
(Oxydendrum arboreum)

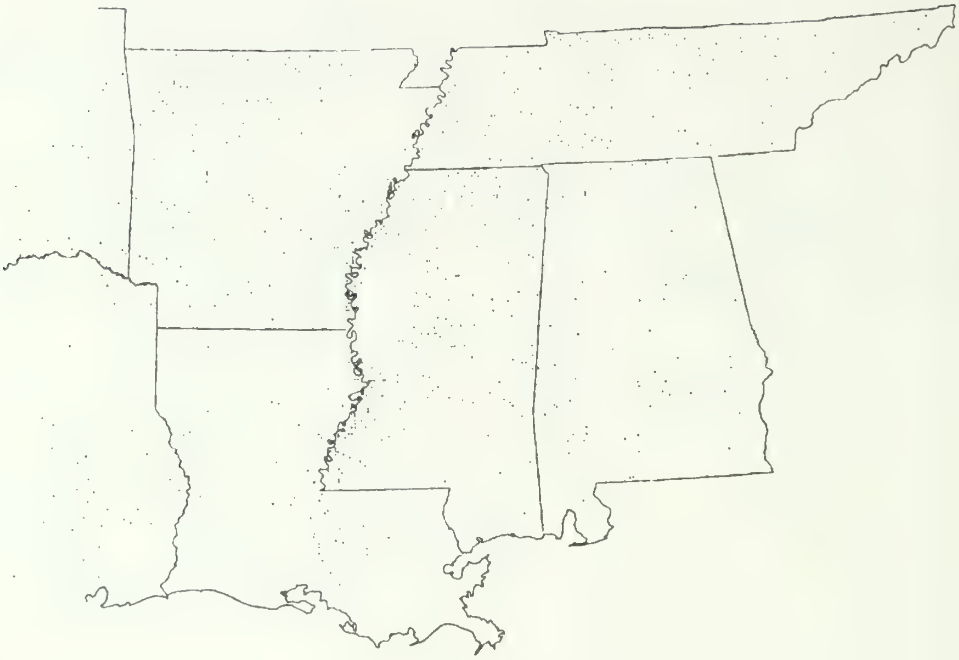
Redbay
(Persea borbonia)

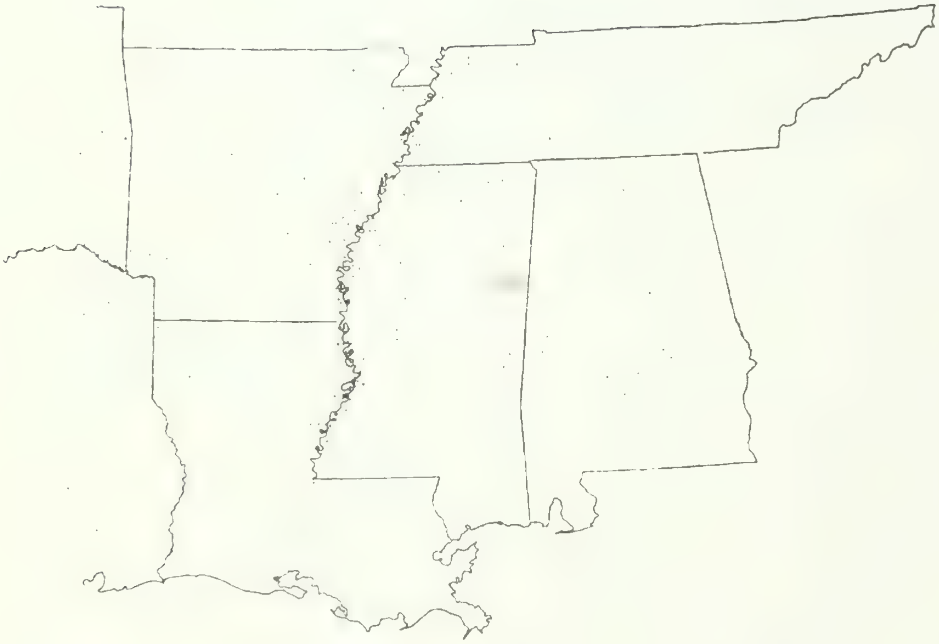




Water-elm
(Planera aquatica)

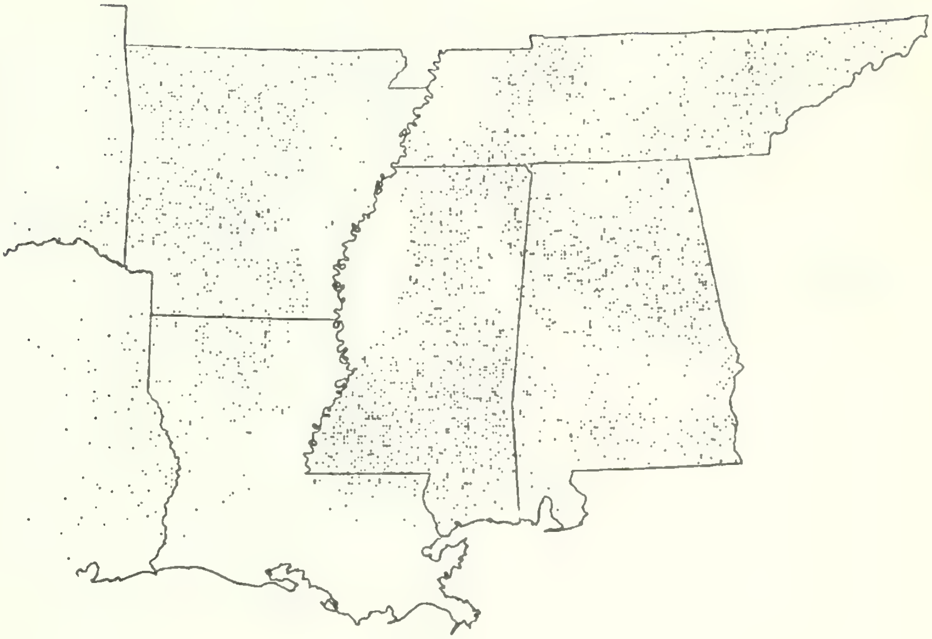
American sycamore
(Platanus occidentalis)

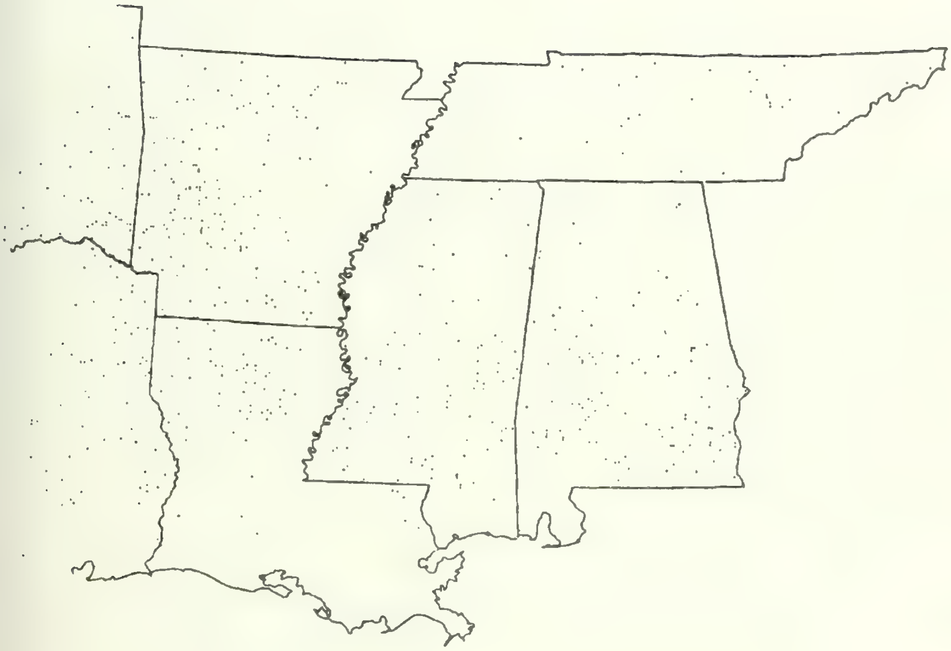




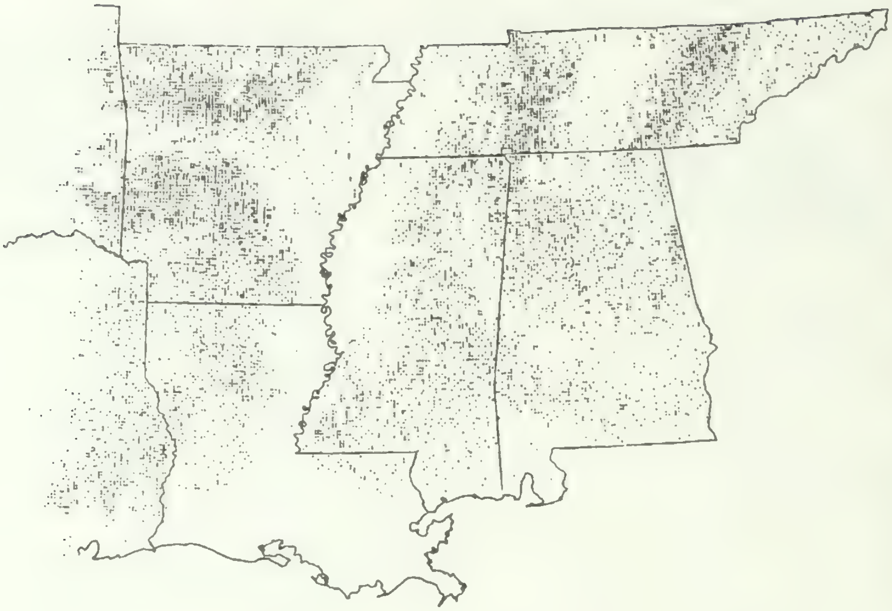
Cottonwood
(Populus deltoides)

Black Cherry
(Prunus serotina)

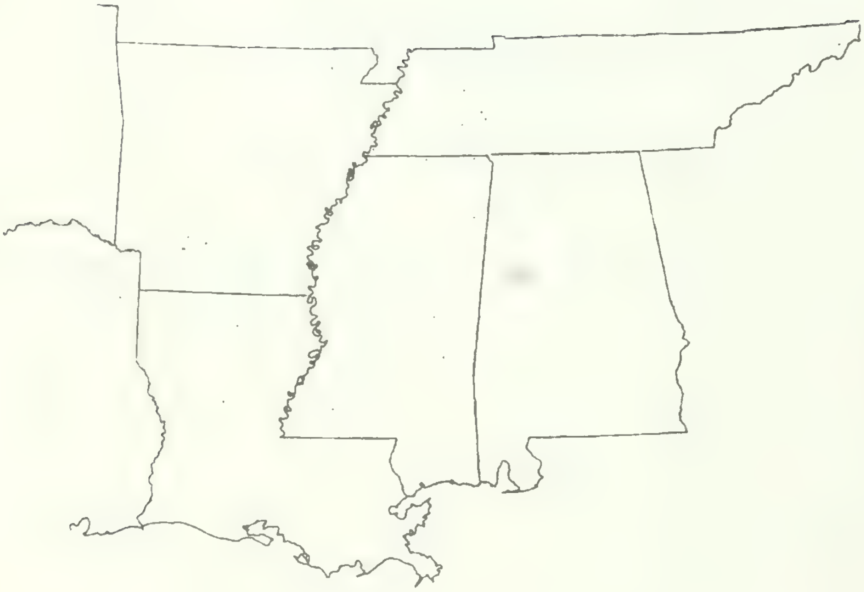




Plum and cherries
(Prunus spp.)

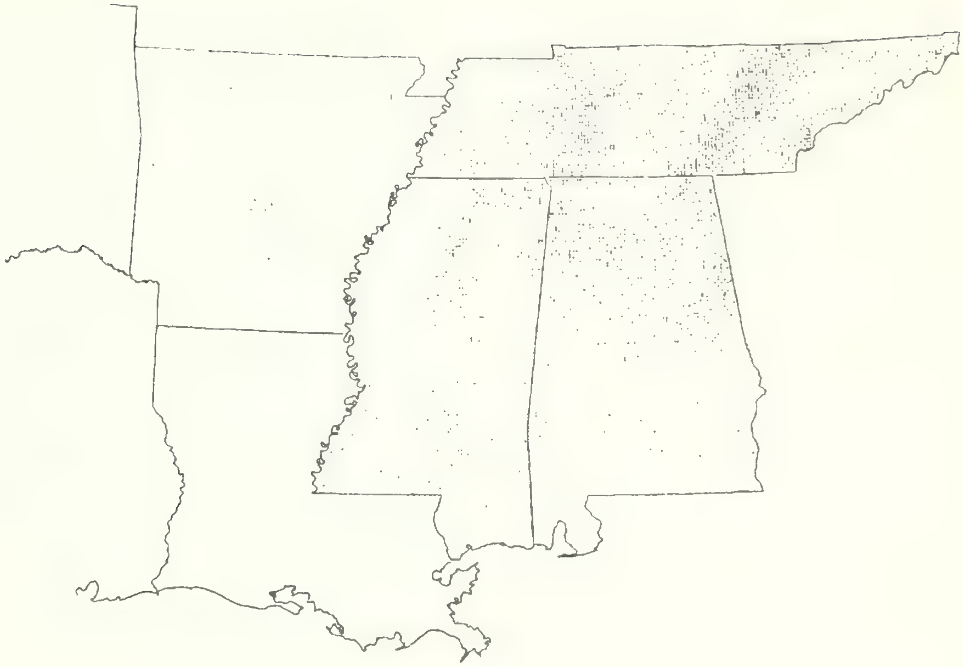


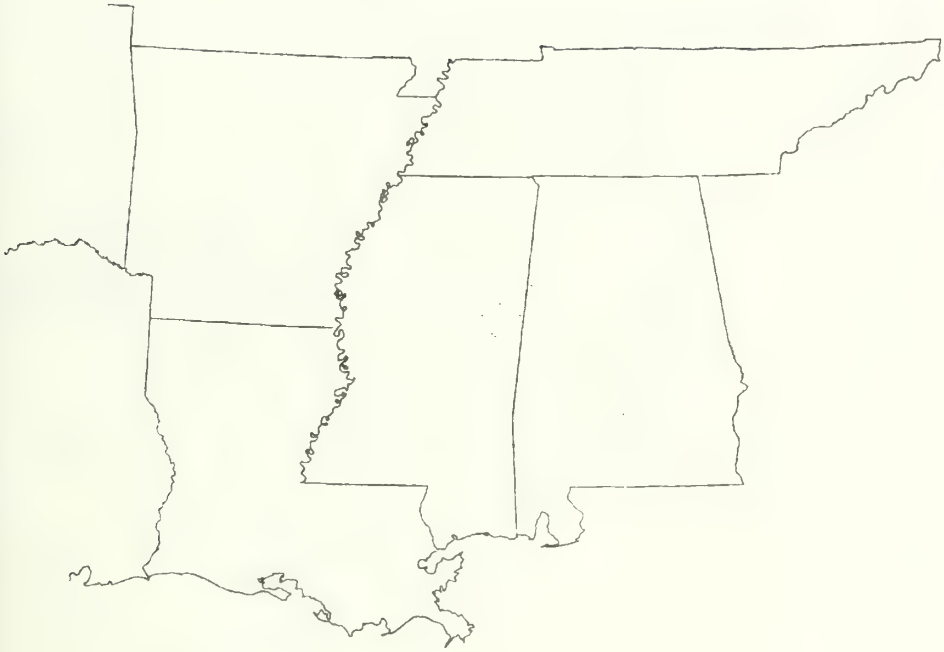
White oak
(Quercus alba)



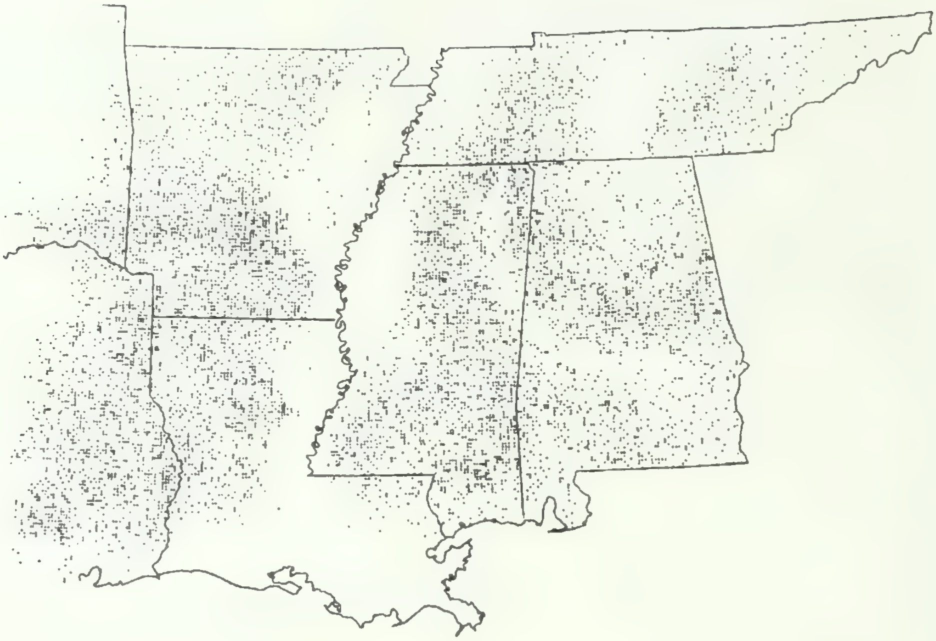
Swamp white oak
(Quercus bicolor)

Scarlet oak
(Quercus coccinea)

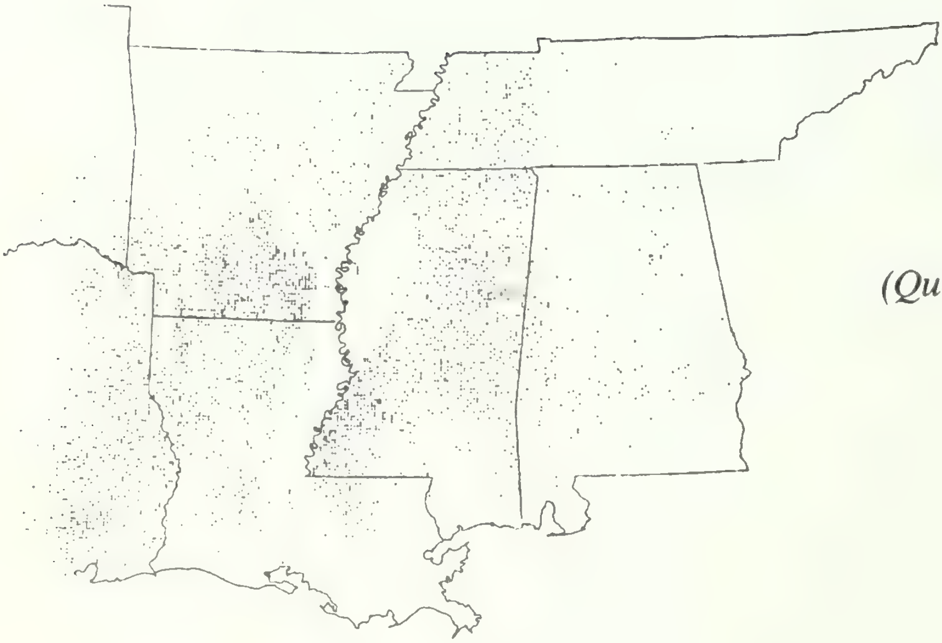




Durand oak
(Quercus durandii)

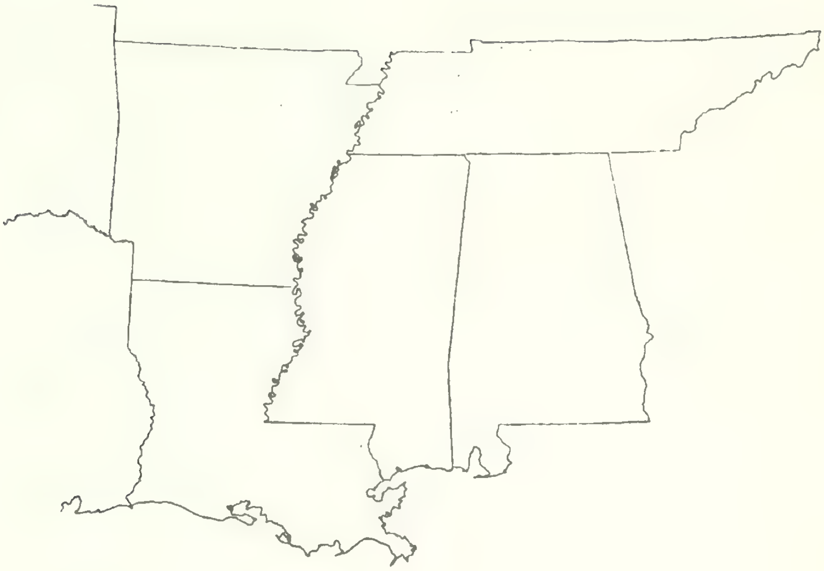


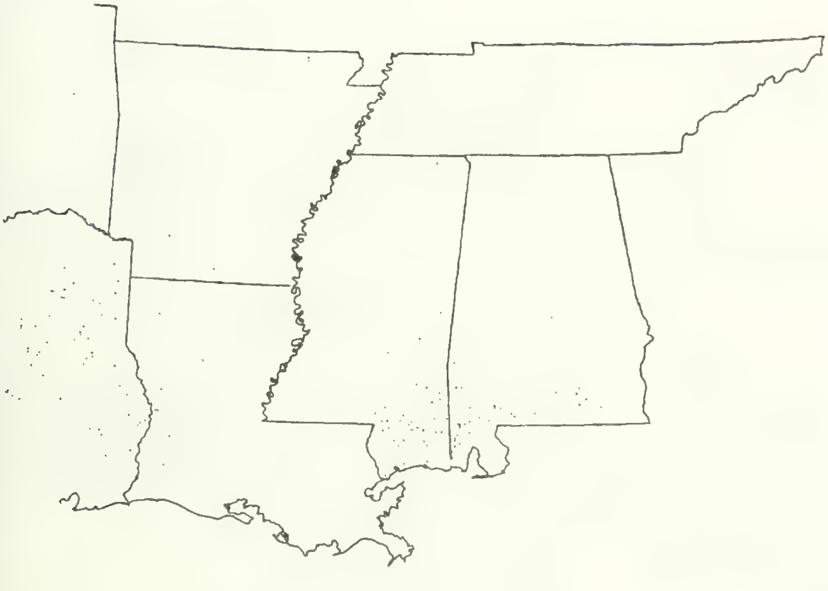
Southern red oak
(Quercus falcata)



Cherrybark oak
(Quercus falcata var. pagodifolia)

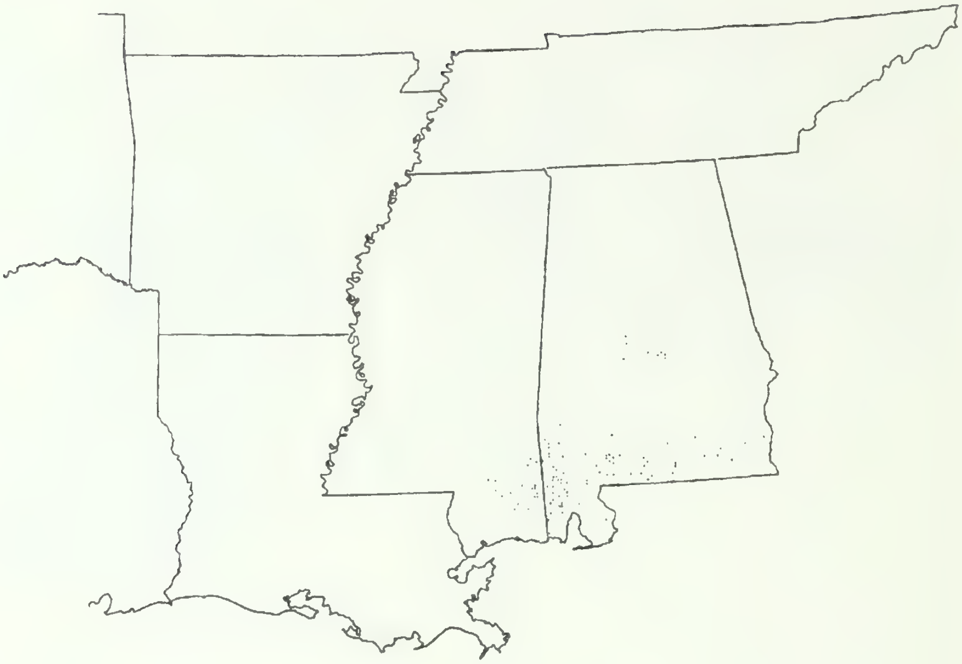
Shingle oak
(Quercus imbricaria)

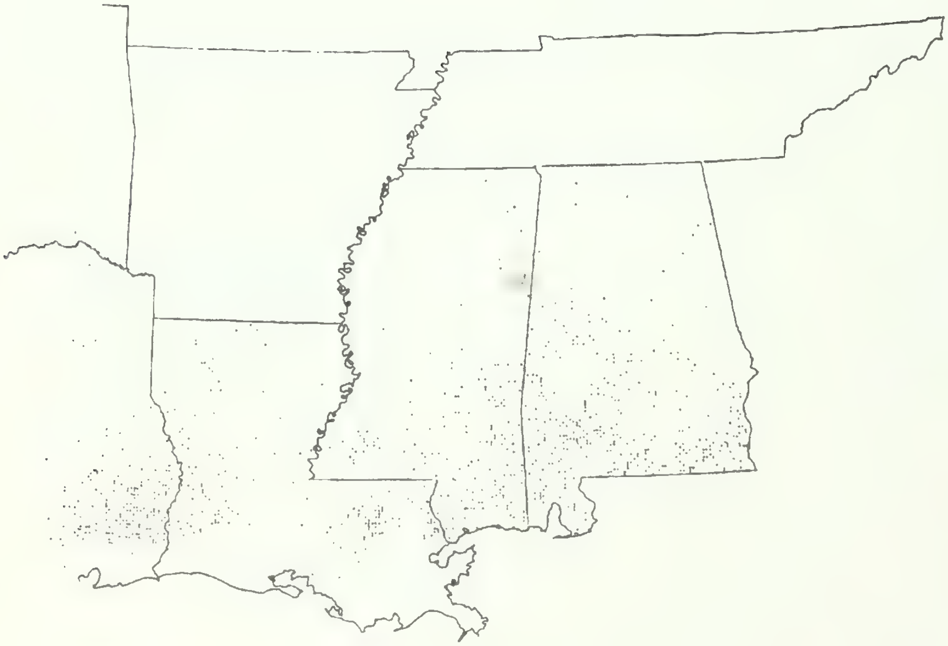




Bluejack oak
(Quercus incana)

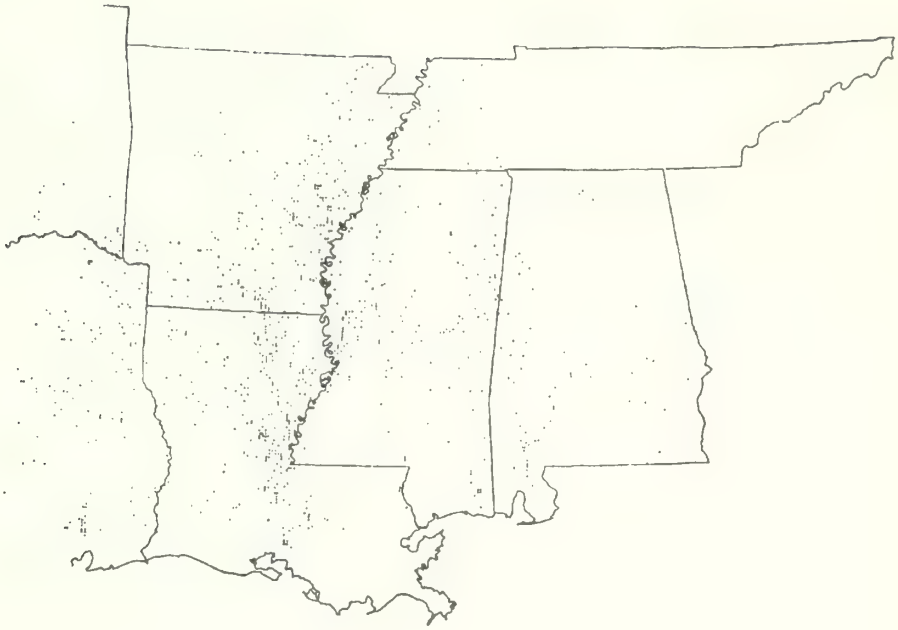
Turkey oak
(Quercus laevis)

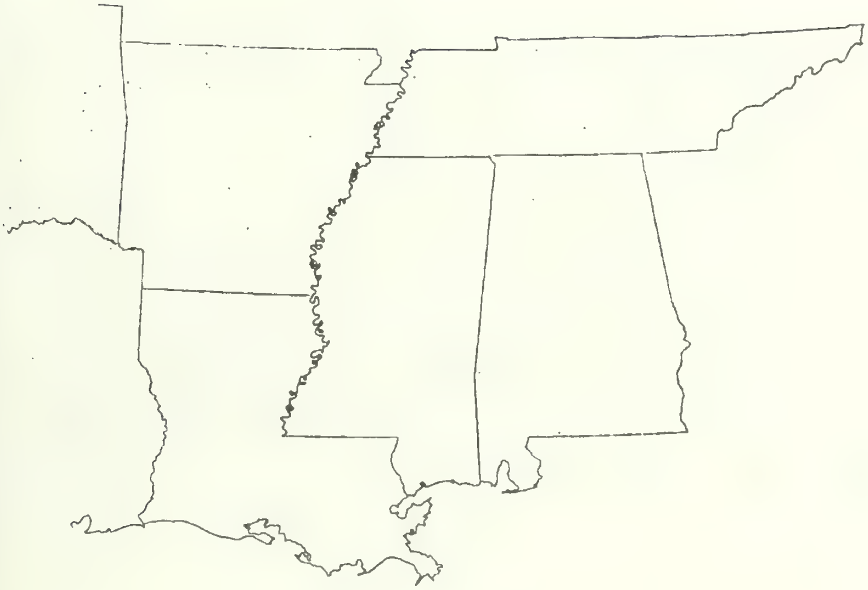




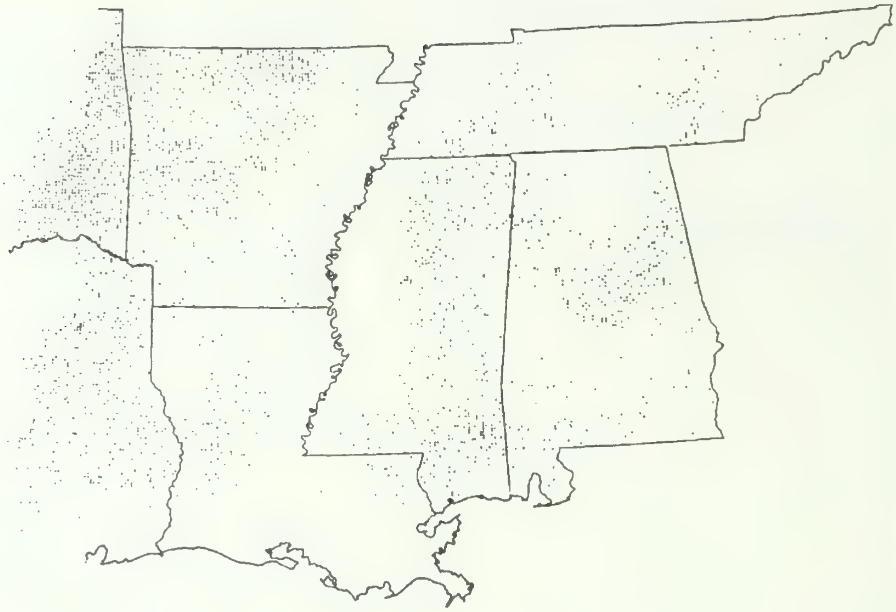
Laurel oak
(Quercus laurifolia)

Overcup oak
(Quercus lyrata)

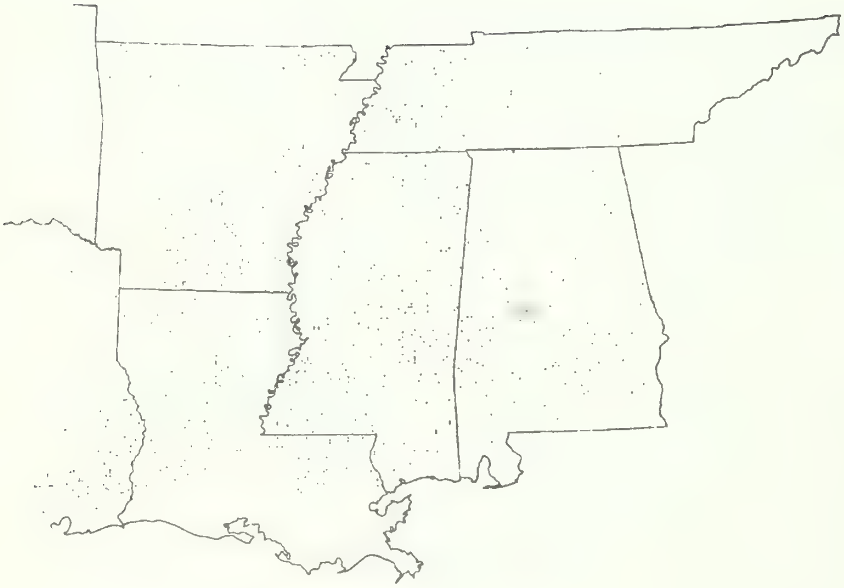




Bur oak
(Quercus macrocarpa)

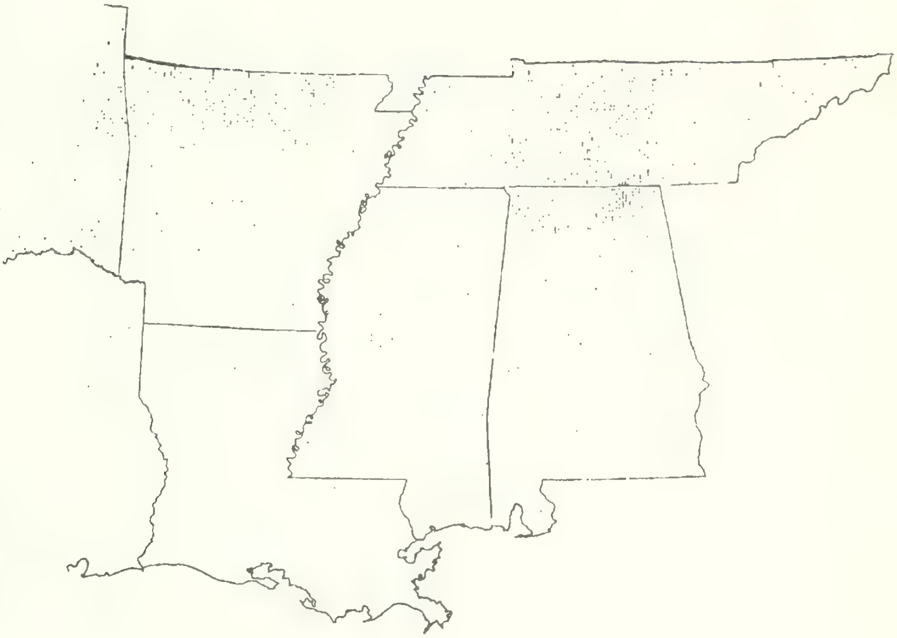


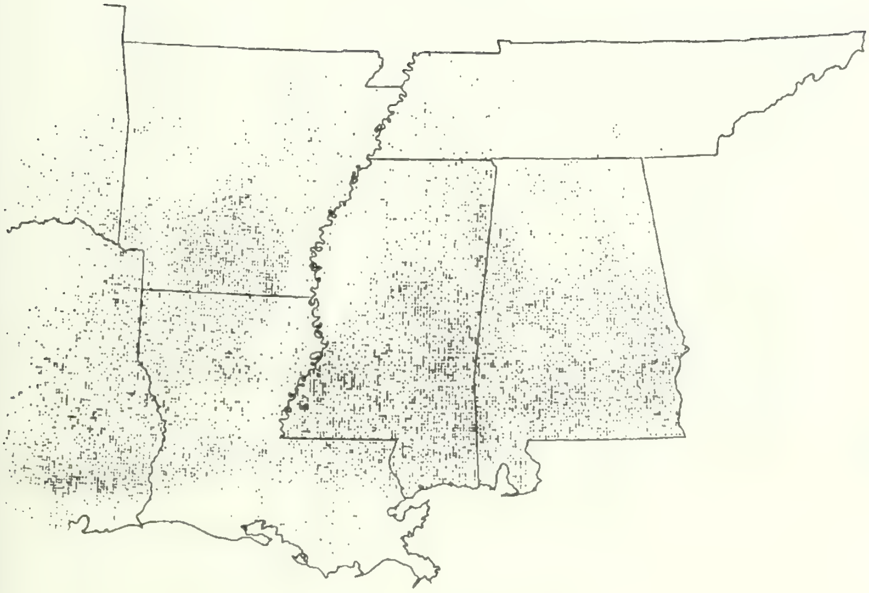
Blackjack oak
(Quercus marilandica)



Swamp chestnut oak
(Quercus michauxii)

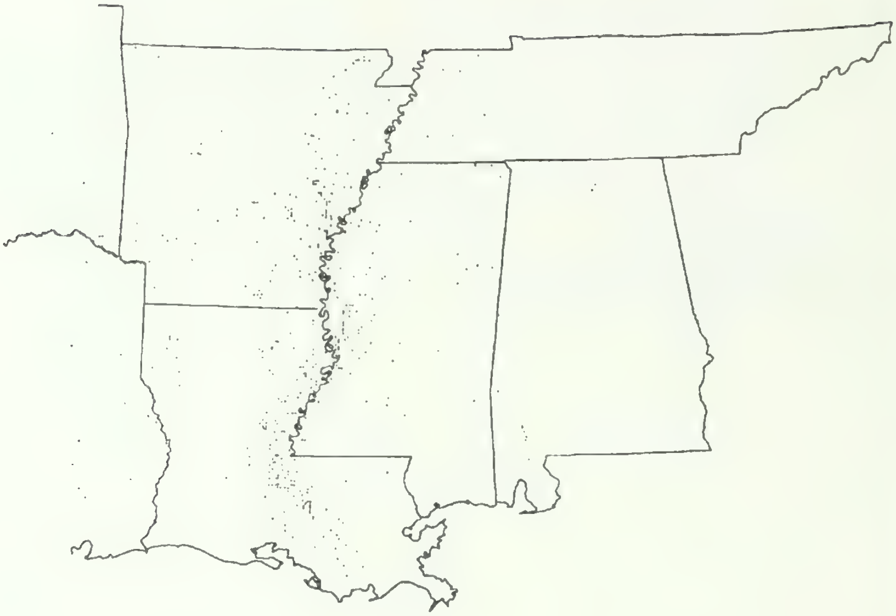
Chinkapin oak
(Quercus muehlenbergii)

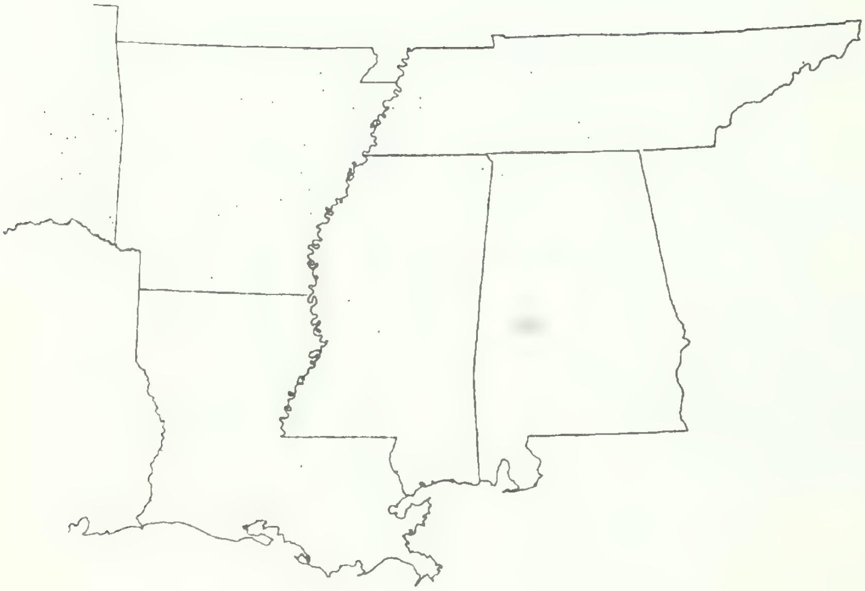




Water oak
(Quercus nigra)

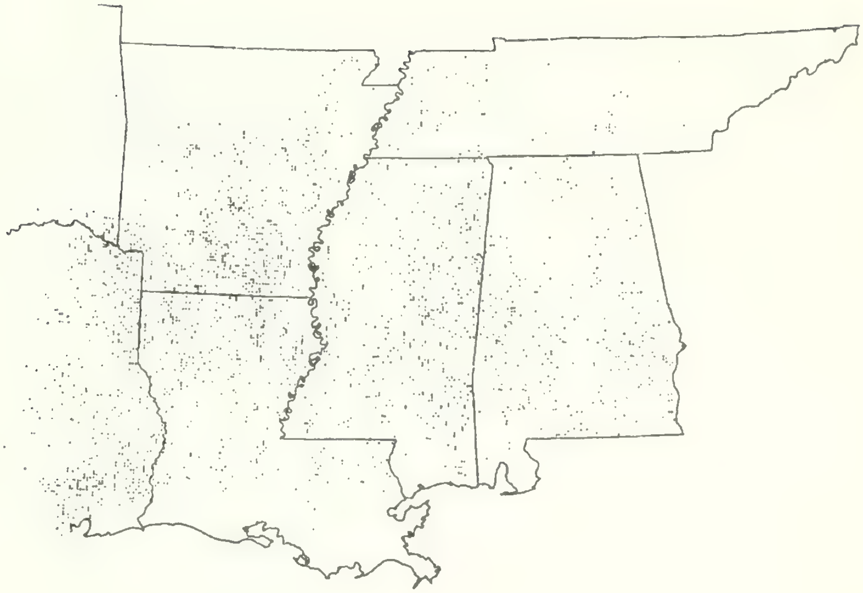
Nuttall oak
(Quercus nuttallii)

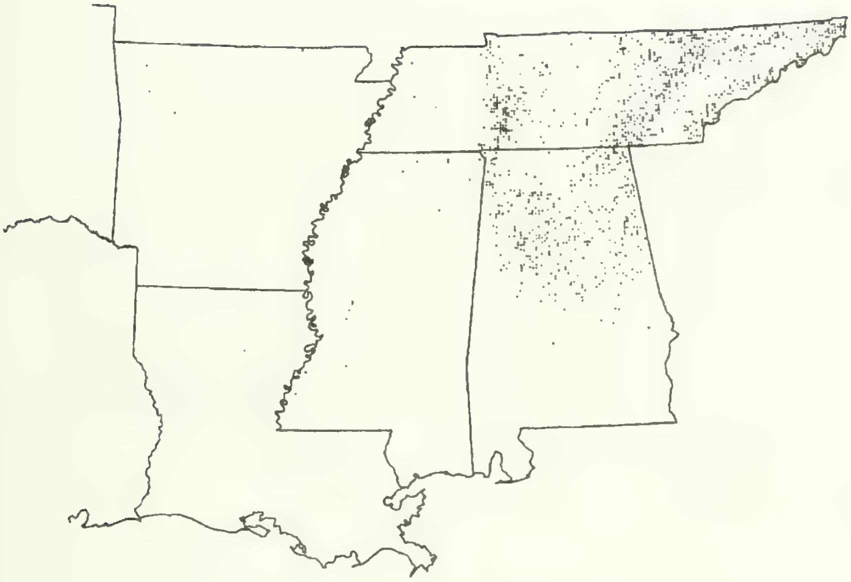




Pin oak
(Quercus palustris)

Willow oak
(Quercus phellos)





Chestnut oak
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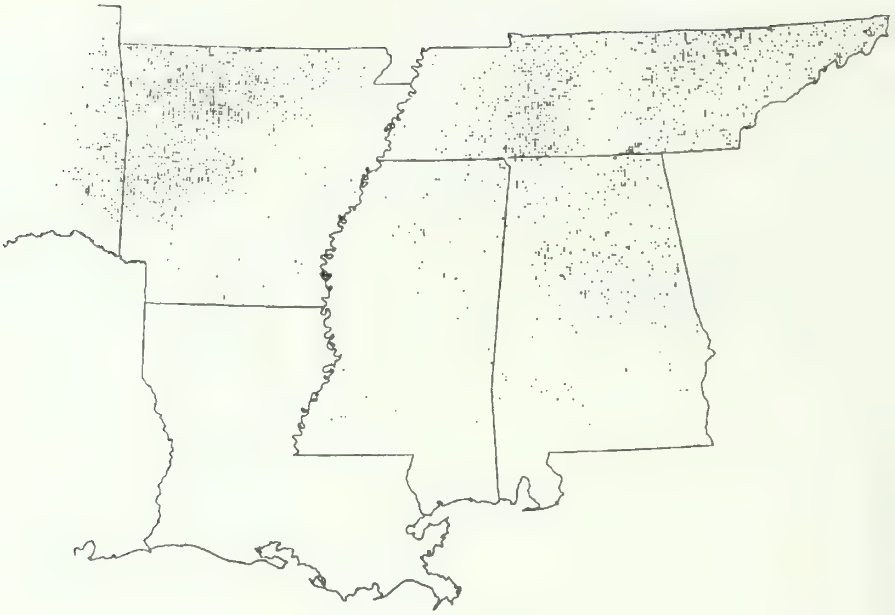

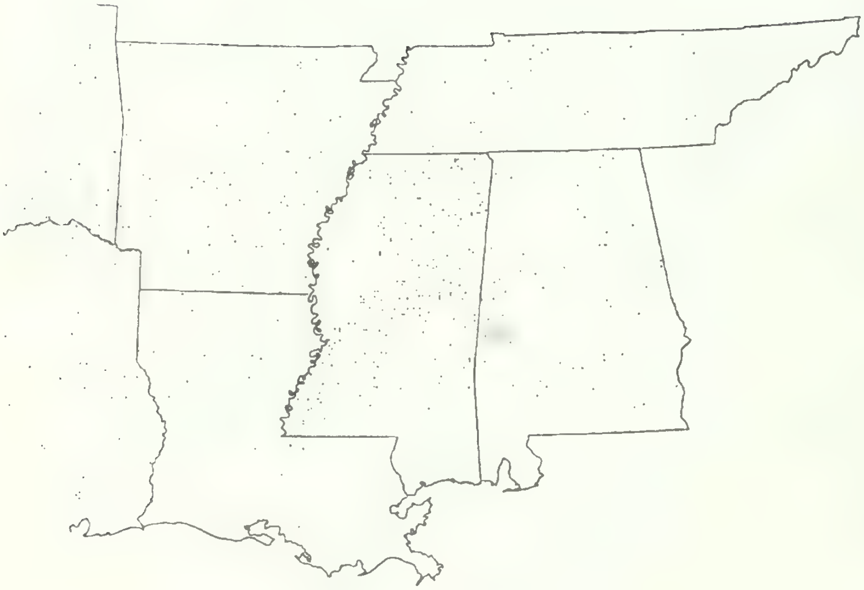

Shumard oak
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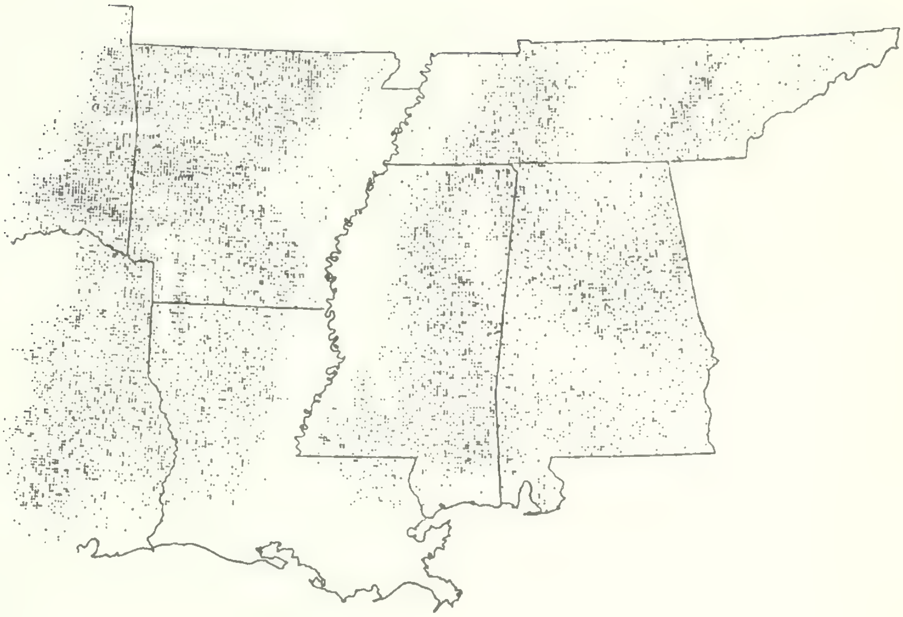
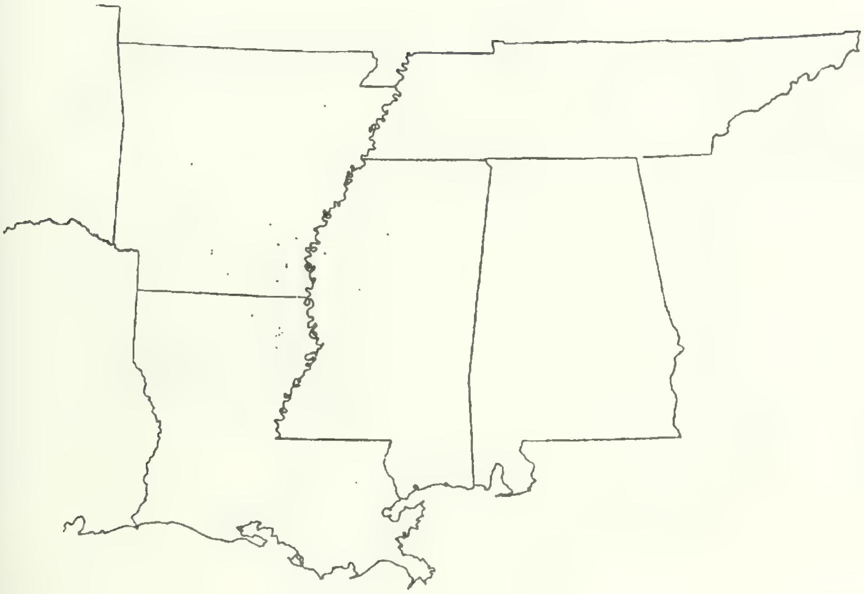
(Quercus stellata)





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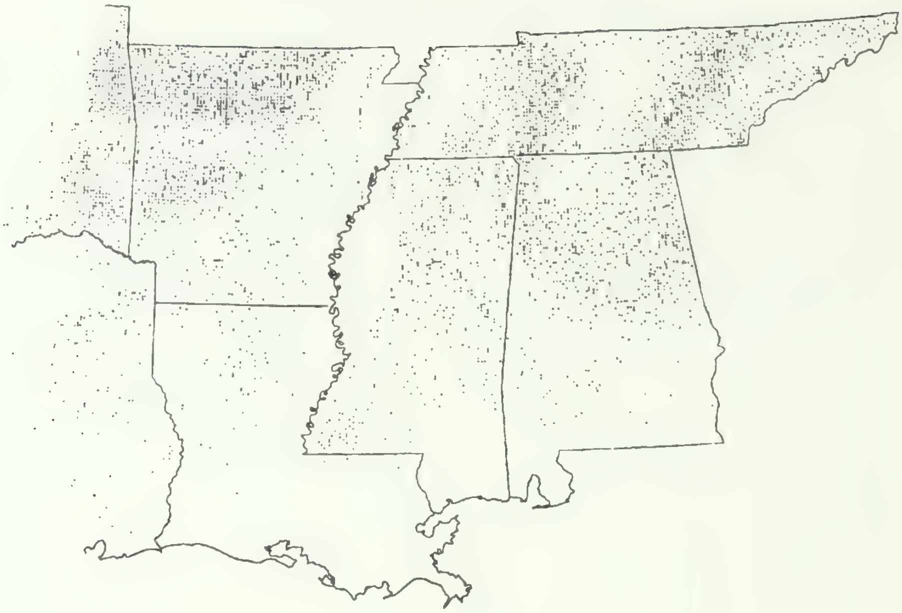

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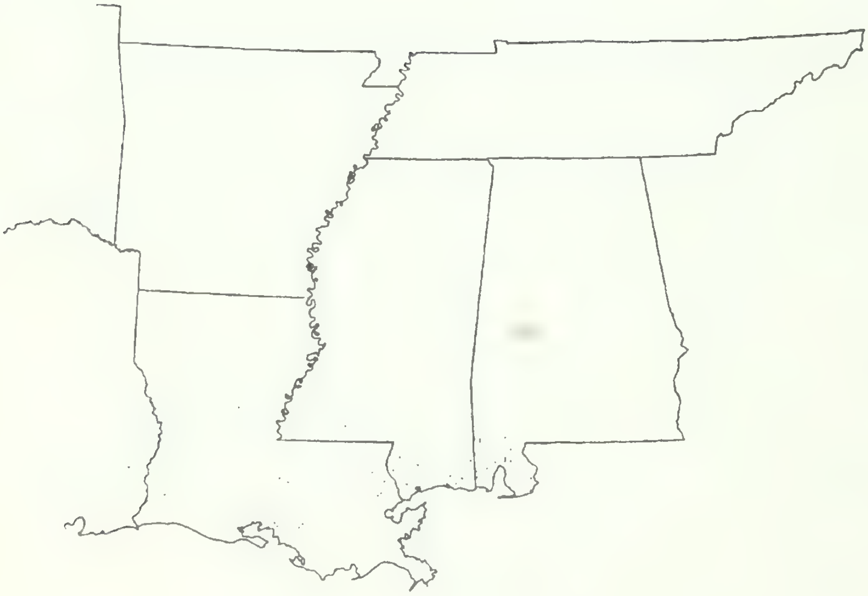

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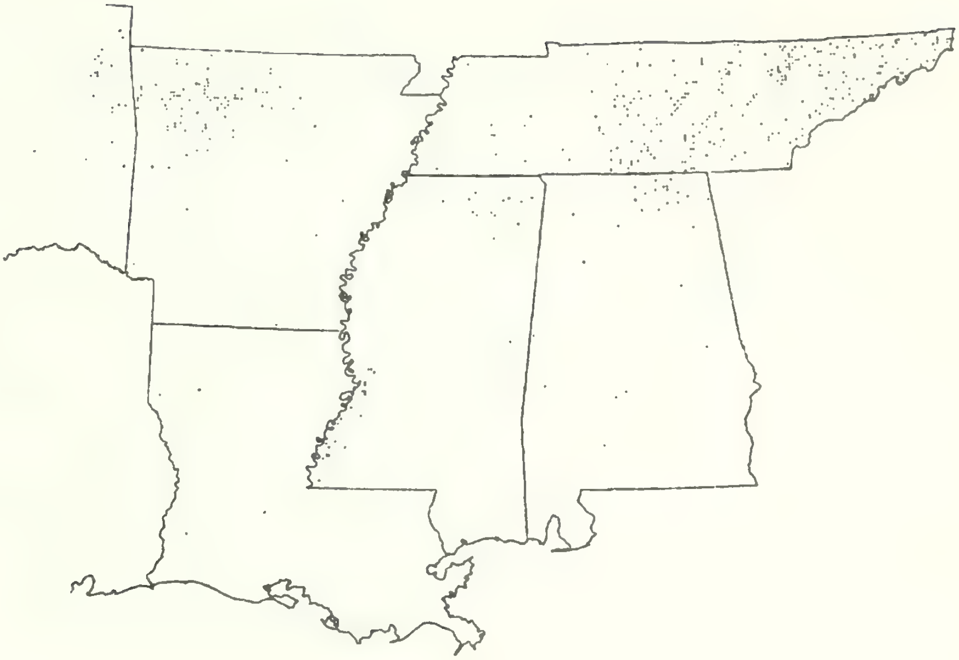

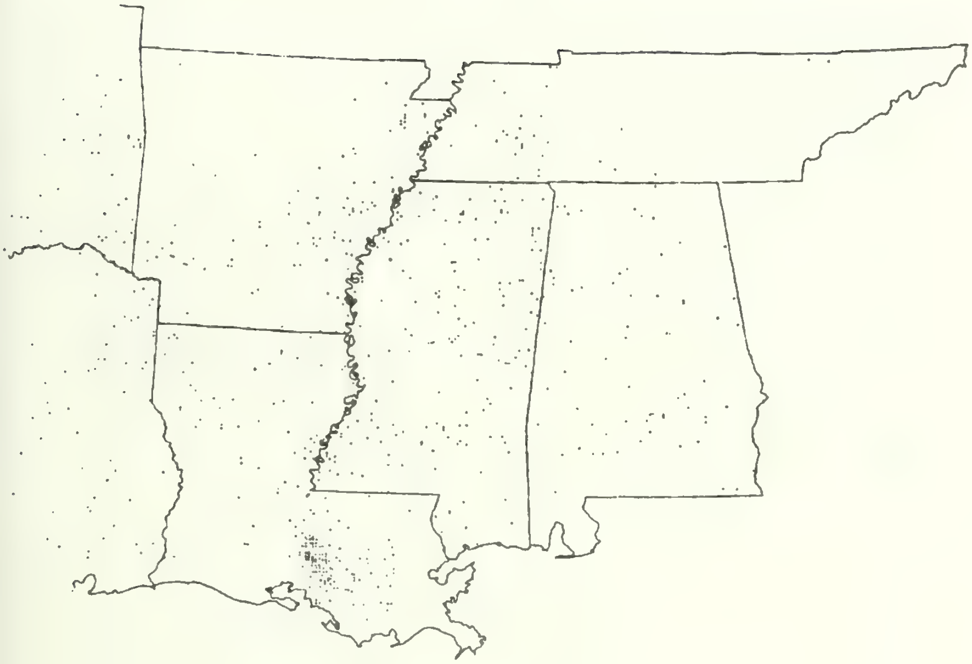

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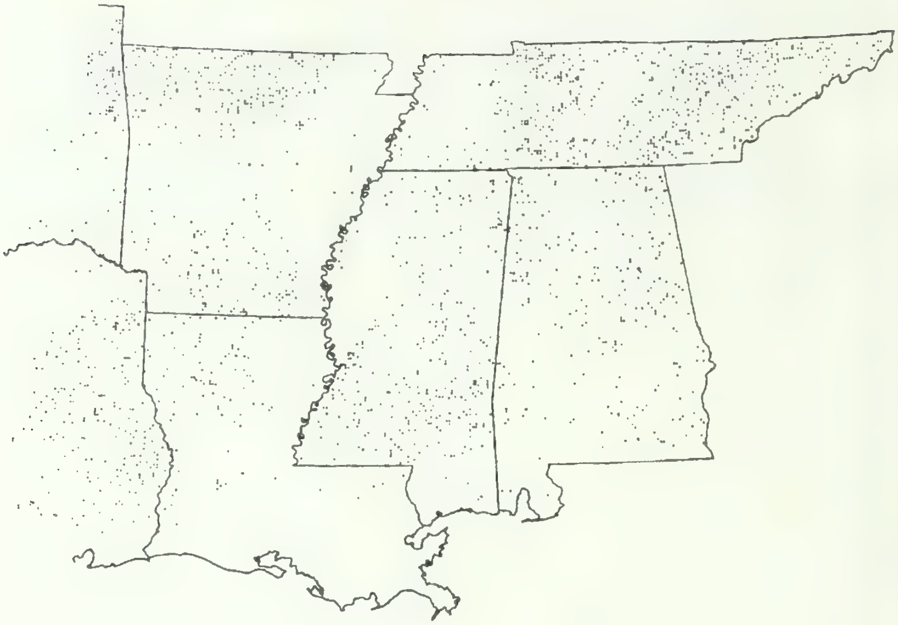

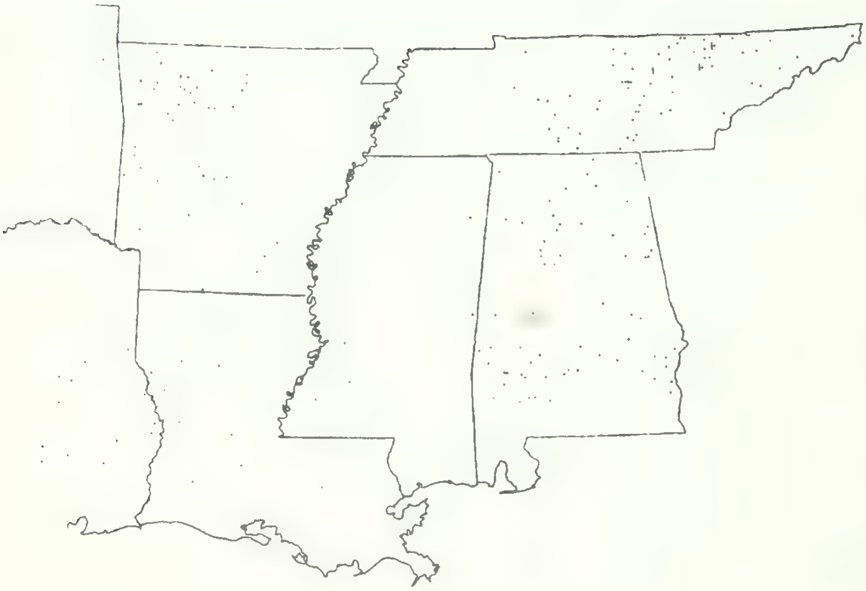

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Winged elm
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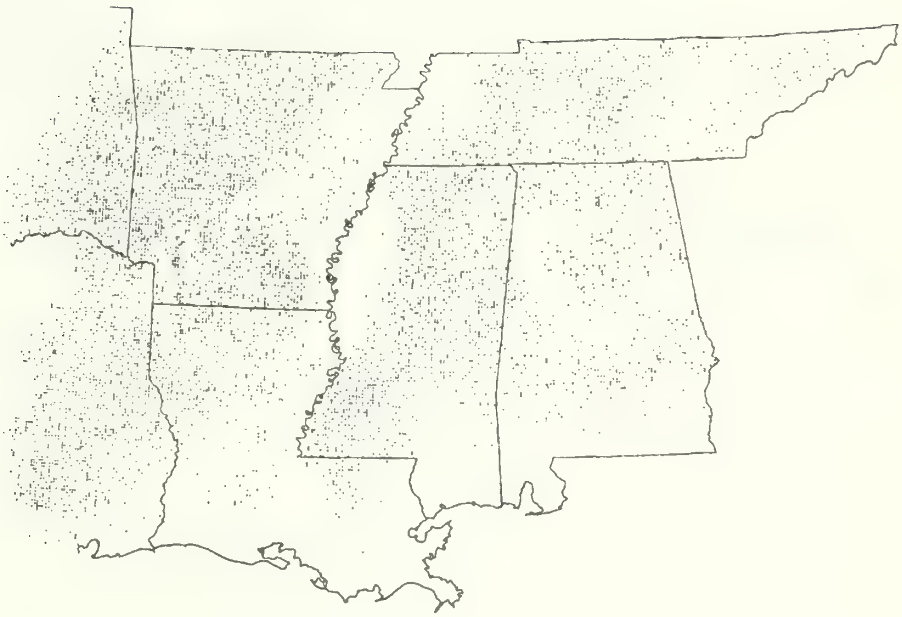

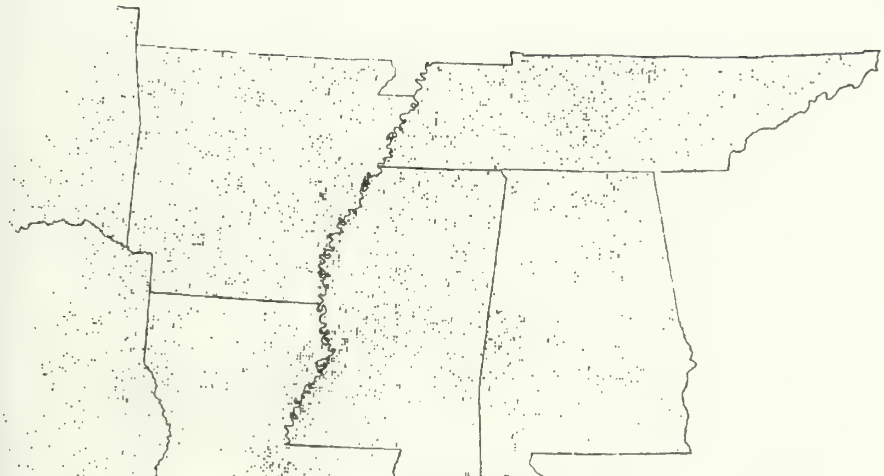

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Cedar elm
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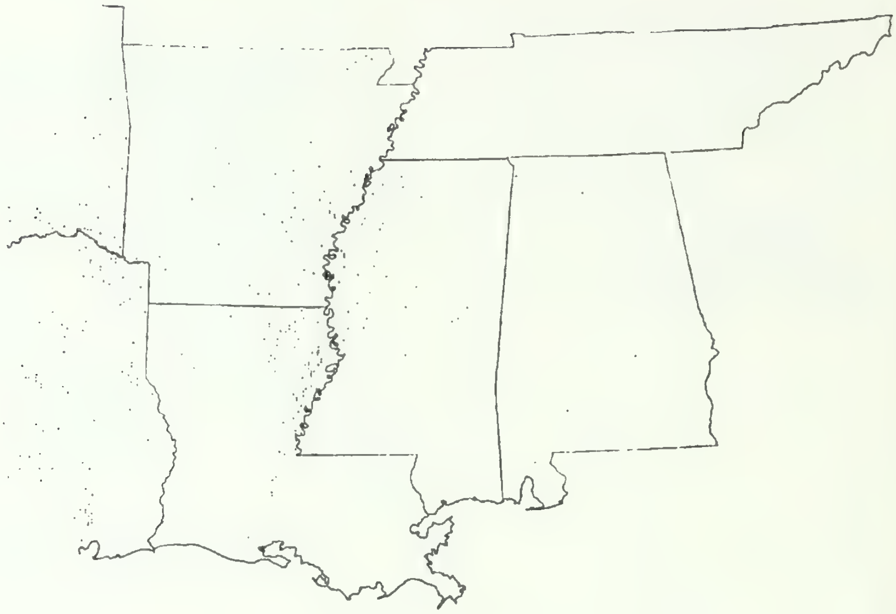

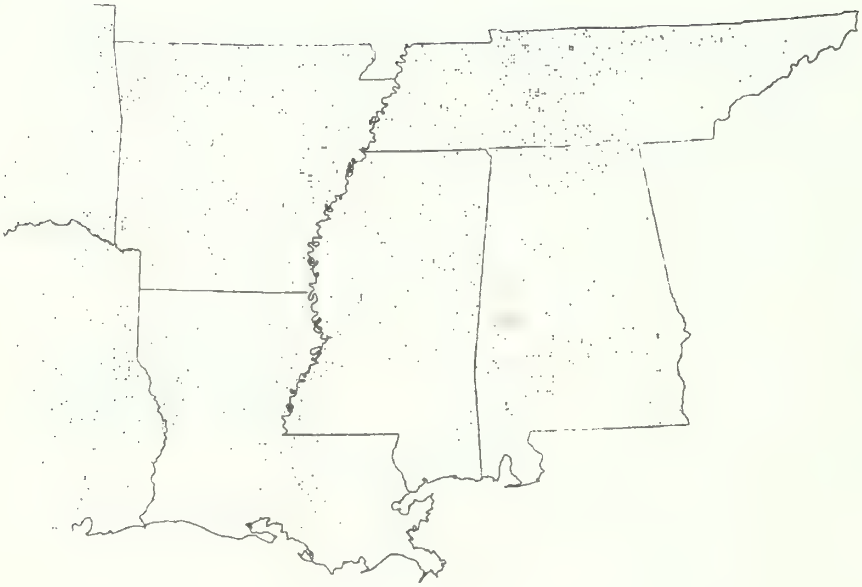

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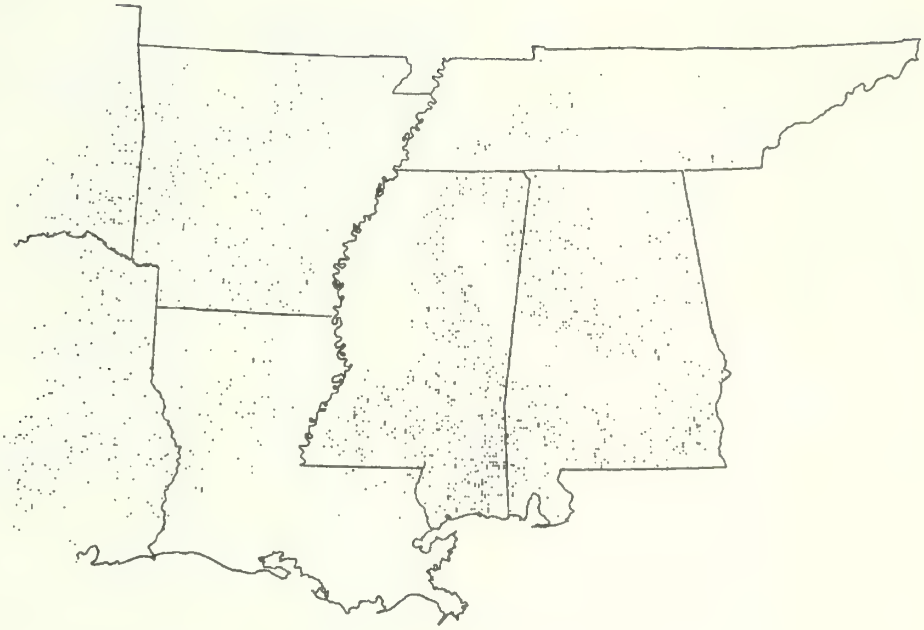

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Beltz, Roy C.; Bertelson, Daniel F. 1990. Distribution maps for Midsouth tree species. Resour. Bull. SO-151.New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 56 p.

Depicts the location of tree species recorded in the U.S. Department of Agriculture, Forest Service, forest survey of the Midsouth.

Keywords: Maps, species, tree.

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Development and Status of Arkansas' Primary Forest Products Industry

Dennis M. May

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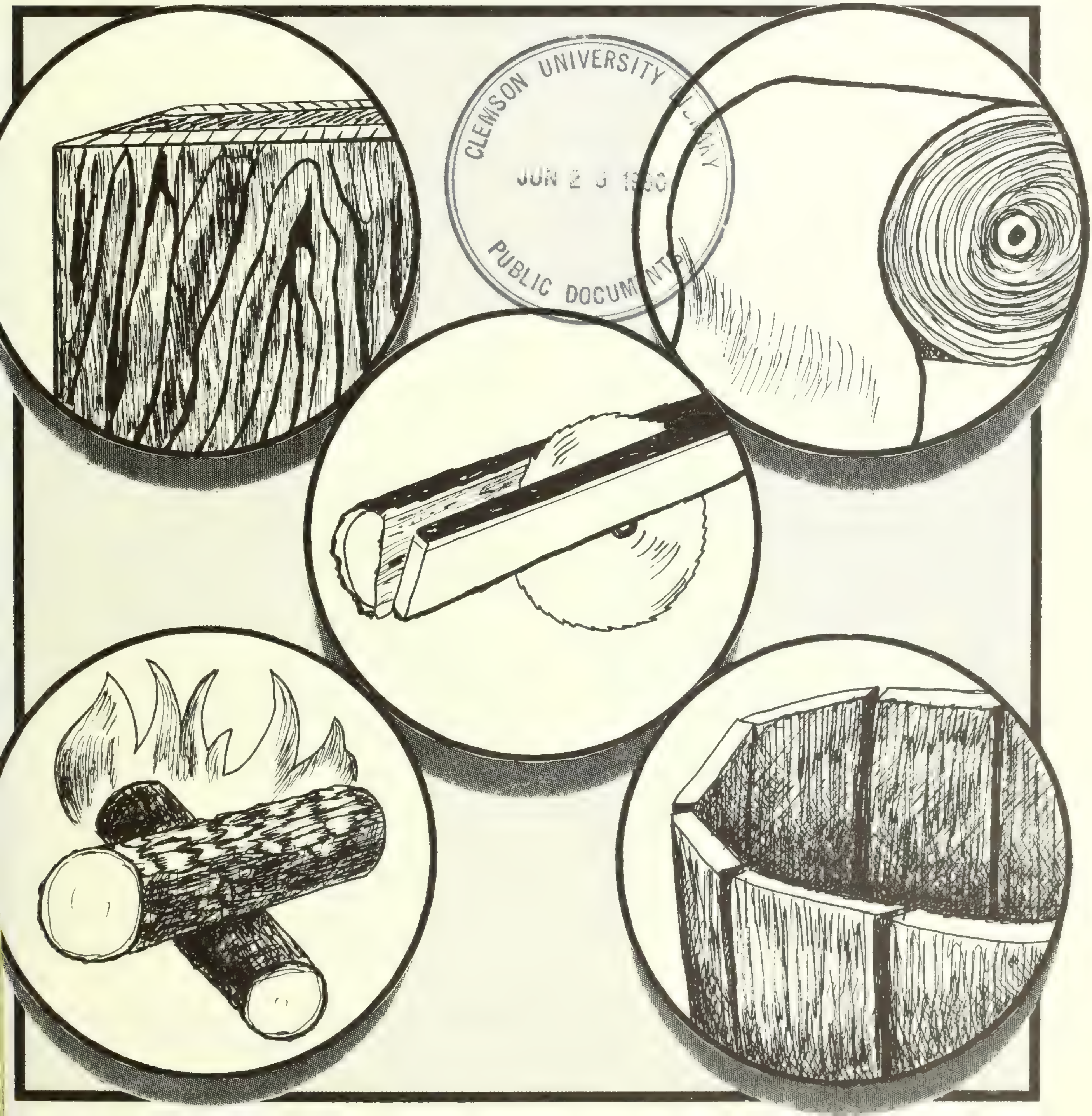

SUMMARY

The latest assessment of Arkansas' primary forest products industry conducted by the USDA Forest Service, Southern Forest Experiment Station, reveals that the State's forest industry has changed considerably over time as it coevolved with the changing forest resource base and adapted to new technologies and market shifts. Today, Arkansas' forest industry is, on the whole, smaller and more efficient, with higher roundwood harvests supplying fewer mills. However, the industry is also less diverse, being dominated by three sectors (lumber, pulp, and veneer), which developed around the softwood resources of the State.

May 1990

Development and Status of Arkansas' Primary Forest Products Industry

Dennis M. May

INTRODUCTION

The USDA Forest Service, Southern Forest Experiment Station, has periodically conducted assessments of Arkansas' primary forest products industry to determine the composition and size of the industry as well as its use of roundwood. The assessments have been conducted in conjunction with the surveys of the State's forest resources. These surveys started in the 1930's and have been repeated on 10-year intervals to the present. This most recent assessment coincides with the 1988 survey of Arkansas' forest resources and follows the development of the State's primary forest products industry to its current status.

INDUSTRY DEVELOPMENT THROUGH 1948

From initial settlement up until the 1880's, Arkansas' forests provided wood for local building needs as well as for domestic uses such as fuelwood and posts. Commercial use of Arkansas' forests did not develop until the late 1880's, when exhaustion of northern forests caused the forest industry to move southward. With its vast expanses of virgin forests in close proximity to expanding urban and industrial centers of the North and South, Arkansas was ideally suited to the development of a commercial forest industry.

Initially, the State's commercial forest industry consisted of large-capacity, permanently established sawmills equipped to convert large-size virgin timber into standard lumber (USDA FS 1937a, 1937b). These mills were dependent on extensive tracts of virgin timber and typically held vast acreages of such lands. For over 40 years, these mills exploited the virgin forests of the State. As the virgin stands were cut-over and as second-growth stands developed, smaller sawmills and nonlumber specialty mills came on-line (Smith 1940). These new mills were better suited to utilizing the generally smaller and lower quality timber in the residual and second-growth stands.

The smaller sawmills were generally portable and were operated intermittently to fill local needs for lumber and construction timbers. These mills could be moved from tract to tract, taking best advantage of the sometimes widely dispersed pockets of timber left after the virgin forests were liquidated. The nonlumber specialty mills were especially prevalent in the hardwood regions of the State and produced items such as cooperage, veneer, handle stock, charcoal, excelsior, and shingles (USDA FS 1938a, 1937b, Winters 1939).

By the time of the first complete survey of the State's forest resources in 1948, all of the virgin stands that initially drew the forest industry to the State were exhausted. In their place were cut-over stands and developing second-growth stands of generally smaller and lower quality trees. In fact, 2 out of every 3 acres of timberland in 1948 were classed as either sapling or pole-sized (Sternitzke 1956). The changing character of the forests, a direct consequence of the actions of the initial forest industry, caused major repercussions throughout the State's sawmill lumber industry.

Unable to efficiently exploit the smaller sized and often dispersed timber of the new forest, the large sawmills lost their competitive advantage to the generally smaller, portable mills that were better suited to utilizing the changing forest. This continuing trend peaked in 1948 when there were over 1,700 sawmills operating in the State. Of this number, only 100 of the mills were classified as large; i.e., annual output in excess of 3 million board feet (fig. 1). The small sawmills not only dominated in numbers, but also processed 60 percent of the State's lumber output in 1948 (Sternitzke 1956).

The changed forests also affected the character of the State's sawlog harvests. Although the exhaustion of the virgin forests reduced the availability of large-sized trees, hardwood sawlogs continued to be cut from what large trees remained in the remnant and second-growth forests (Sternitzke and James 1951).

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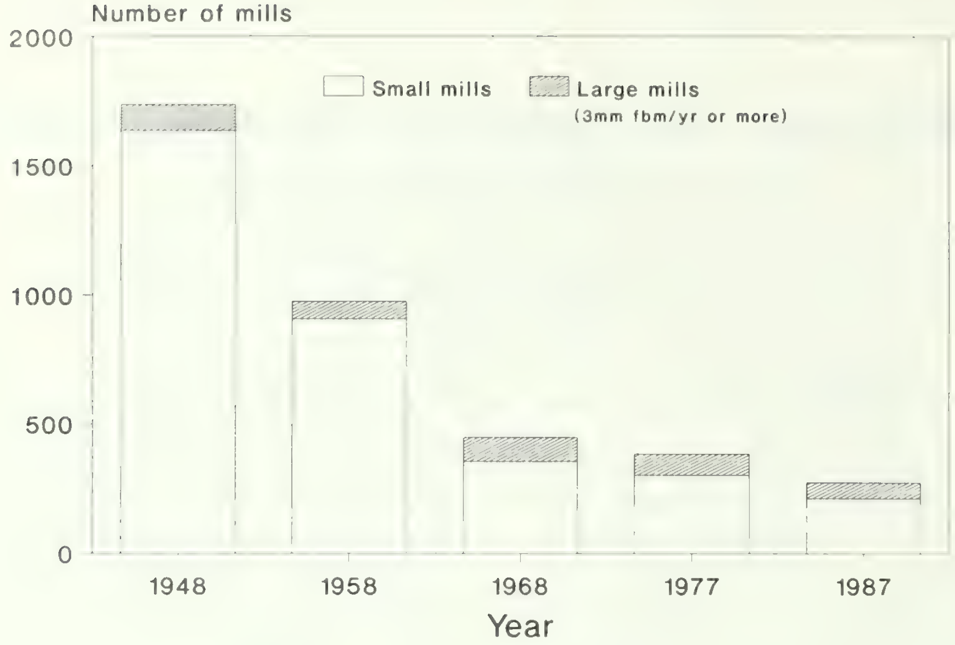

Figure 1.—*Size of Arkansas' sawmill industry by survey year.*

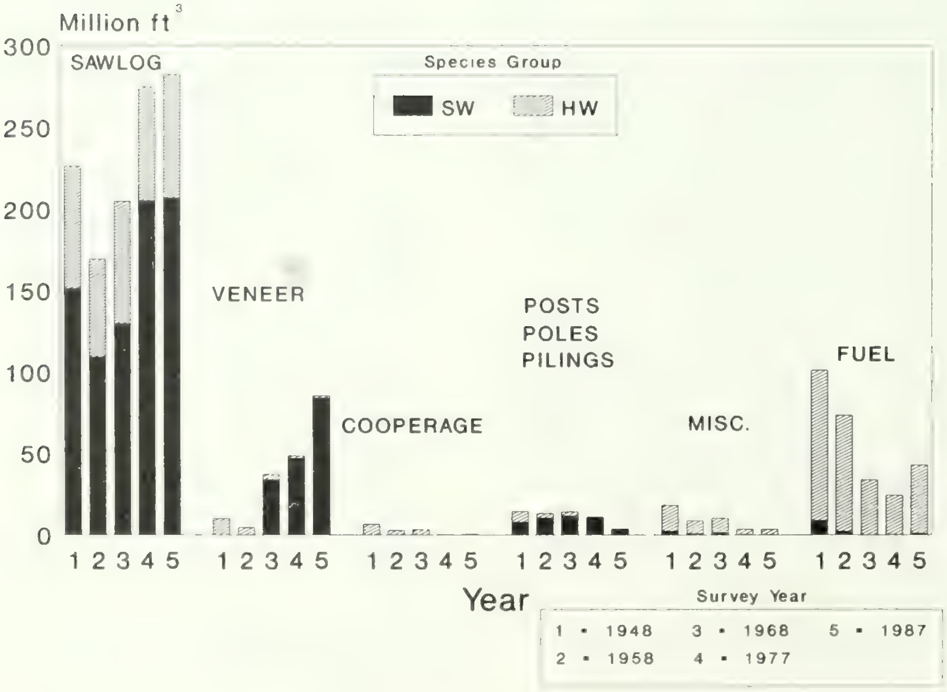

Figure 2.—*Arkansas' timber product output by product, survey year, and species group.*

As a result, the proportion of hardwood in the total sawlog harvest fell from one-half prior to the exhaustion of the virgin forests to one-third in 1948 (fig. 2). Softwood sawlog harvests, on the other hand, were necessarily being cut from smaller trees, with 6- to 12-inch trees accounting for 40 percent of the softwood sawlog harvest in 1948 (Sternitzke and James 1951).

In addition to these numerous sawmills, 240 nonlumber mills added diversity to Arkansas' forest industry (fig. 3). The pulpwood industry, still in its infancy with only two mills operating in the State, was starting to expand due to the defense-accelerated tax amortization program of World War II, advances in sulphate processing of southern pine pulp, and the available supply of small softwoods. The State also had an established veneer industry producing mostly container veneer for the packaging and shipping industries. Small amounts of plywood and face veneer were also being produced for use in furniture manufacture. This industry was completely dependent on the hardwood resources of the State, preferring high-quality soft hardwoods, mostly gums, of at least 20 inches in diameter (Sternitzke and James 1951).

Another established industry dependent upon the hardwood resource of the State was the cooperage industry. In 1948, Arkansas was a leading supplier of tight cooperage produced from high-quality white oak and used in the manufacture of whiskey barrels. Additionally, soft hardwoods were also in demand for the production of slack cooperage used in the packing and shipping industries. The State also had a post, pole, and piling industry that was beginning to develop around the ability of southern pine to take wood-preservative treatments. However, local use of hardwoods still accounted for a large proportion of the industry's output in 1948. Arkansas' forest also supported numerous specialty mills that produced a variety of products (handle and furniture stock, charcoal, excelsior, and shingles), mostly from the hardwood resources of the State. The number one use of Arkansas' hardwood resource, however, was firewood, which was used for domestic heating and cooking.

INDUSTRY DEVELOPMENT FROM 1948 TO 1958

Over the next 10 years, the character of the State's forests continued to change. The softwood resource expanded due to the maturation and increased management of the young forest found in 1948, and the hardwood resource deteriorated as a result of continued high-grading of selected species, landclearing, and management practices discriminating against hardwoods. These resource changes, as well as changing markets and technological advances, would have significant ramifications for the forest products industry in the State.

Lumber Industry

By 1958, the trend of increasing numbers and output of small sawmills had been reversed (fig. 1). In total, 762 sawmills closed over the 10-year period (Sternitzke 1960). These mills were primarily small operations. At the same time, production shifted over

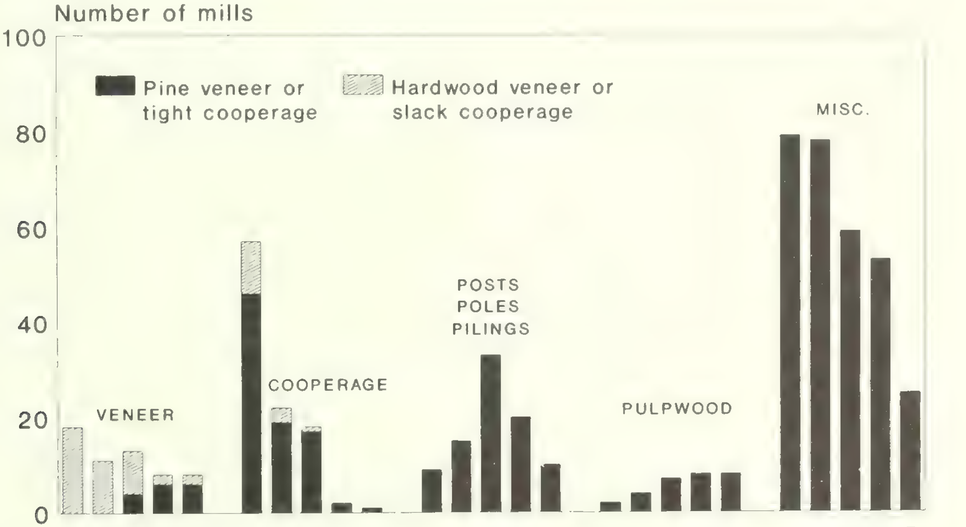

Figure 3.—*Size of Arkansas' primary wood products industry by mill type and survey year.*

to the more efficient large mills, which processed 65 percent of the lumber output in 1958 (Sternitzke 1960). This shift in competitive advantage back to larger sawmills resulted from technological advances spurred by the need for sawmills to efficiently convert small logs into lumber and the need for an economical source of pulping fiber to supply the expanding pulping industry. The technological advances that answered these two needs were the debarker and chipper and the chipping headrig (Anderson 1987).

These technologies allowed sawmills to convert more of each small log into usable products, while providing the pulping industry with quality debarked chips from the denser outer cores of the logs at prices comparable to roundwood. Because of the preference for softwood fiber in the pulping industry, as well as the high cost of implementation, the new chipping technologies were generally confined to the larger permanently established softwood sawmills. By 1958, over 50 large sawmills in the State were equipped with the latest chipping technology (Sternitzke 1960). Once installed, the chipping technologies provided a competitive advantage over smaller mills, which could only produce one product from each log rather than several (Anderson 1987). As a result, most of the smaller sawmills operating in 1958 were hardwood mills.

Pulp Industry

The expanding softwood resource of the State, plus the new source of pulping fiber provided by the chipping technologies, fueled an expansion of the State's pulping industry. Two new mills, plus capacity increases in existing mills, tripled the pulping capacity in the State (figs. 3, 4). Accompanying this jump in capacity was a rise in Arkansas' output of pulpwood, with chipped residues from sawmills supplying 20 percent of the total (fig. 5).

Veneer Industry

Conditions weren't as favorable for those segments of the State's forest industry typically dependent on high-quality hardwoods. Persistent high-grading of selected species was beginning to lead to shortages in suitable furnish. This, coupled with changing market conditions, had negative effects on the veneer and cooperage industries. In 1958, Arkansas' veneer industry had seven less mills, and veneer-log output was half of what it had been a decade earlier (figs. 2, 3). Competition from substitutes, mainly paperboard and plastics, reduced container veneer's market share of the packaging and shipping industries. Of the seven veneer mills that closed over the period, four were container veneer mills (Sternitzke 1960), evidence of the role substitutes played in the market. In addition to market modifications, changes in the hardwood resource were starting to affect the industry built around it. Continued high-grading was diminishing the supply of acceptable veneer logs, causing substitution with less-desirable species. In 1948, gums constituted 78 percent of the veneer logs cut, but by 1958 the proportion had dropped to 57 percent, with other soft hardwood species substituting for the gums (Sternitzke 1960).

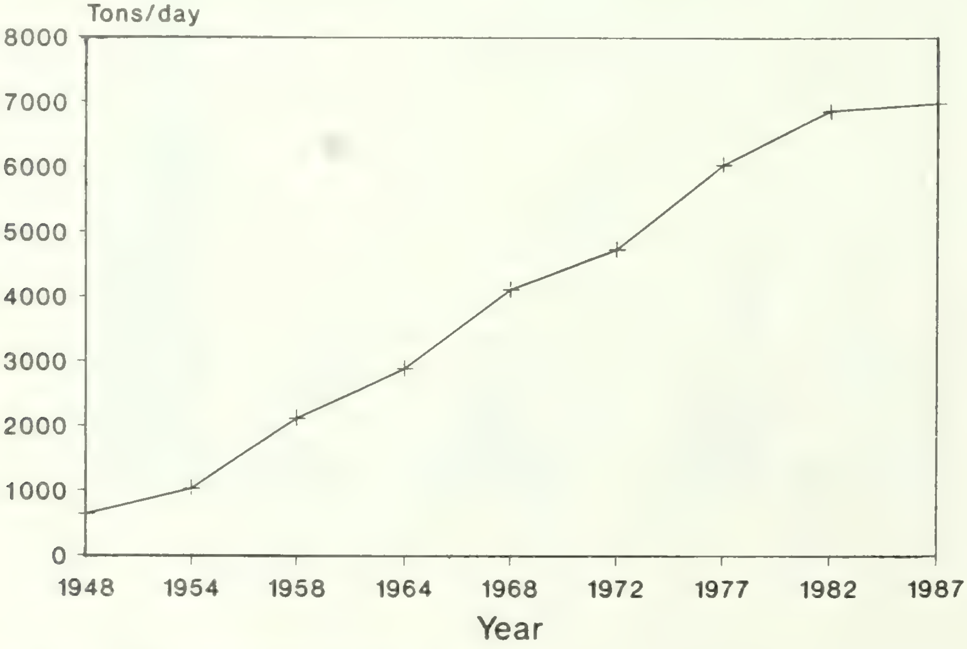

Figure 4.—*Arkansas' pulping capacity.*

Cooperage Industry

Similar trends occurred in the cooperage industry. From 1948 to 1958, the number of mills operating and cooperage bolt harvest fell by more than half (figs. 2, 3). Although reduced, Arkansas' cooperage industry still remained a leading supplier of tight cooperage in 1958. The slack cooperage industry, however, fell under the same pressure as the veneer industry—mainly competition from substitutes in the packing and shipping industries and shrinking inventories of preferred soft hardwood species.

Miscellaneous Industries

In the remaining nonlumber industries, the post, pole, and piling industry increased in numbers and started shifting emphasis towards treated pine and away from local-use hardwoods (figs. 2, 3). The miscellaneous specialty mills remained stable in number, but timber harvests fell by half and remained predominantly hardwood. With increasing urbanization, Arkansas' population opted for more convenient gas and electric energy for heating, causing a decline in fuelwood consumption.

INDUSTRY DEVELOPMENT FROM 1958 TO 1968

Into the 1960's, segments of the State's forest industry dependent upon the ever increasing pine resource continued to expand. Unfortunately, the continued trends of the past reduced the quality and quantity of the hardwood resource, causing a shift in species composition towards less desirable trees and darkening the future of the industries dependent on the hardwood resource.

Lumber Industry

As a direct consequence of the new technologies implemented a decade earlier, the sawmill industry continued its trend towards fewer, larger, and more efficient mills (fig. 1). Between 1958 and 1968, the number of sawmills decreased by more than half, while sawlog harvests actually increased (fig. 2). Much of the increase in efficiency was concentrated in the larger mills, 10 of which produced 40 percent of the State's lumber output in 1968 (Van Sickle 1970).

Pulp Industry

Arkansas' pulping industry took off in the 1960's due to an increasing softwood resource and increasing demand for pulp and paper products. Pulping capacity doubled with the startup of three new mills and expansions of existing mills (figs. 3, 4). With this increased capacity came an accompanying rise in pulpwood production (fig. 5). The effects of the chipping technology implemented a decade earlier were especially evident in the dramatic rise in chipped residue production, which supplied one-third of the State's output in 1968. Also evident in this period was an increasing acceptance of hardwoods as a source of pulping fiber. This was the result of pulping technology advances that expanded the number of hardwood

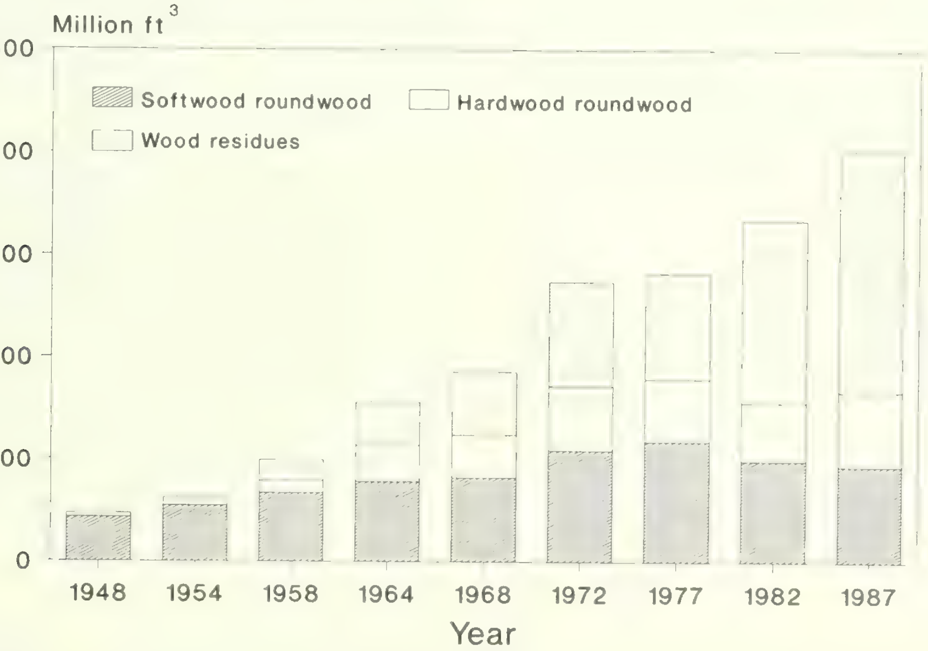

Figure 5.—*Arkansas' pulpwood production.*

species suitable for pulping. Initially, soft hardwoods comprised most of the hardwood pulping fiber, but by 1968 hard hardwood was out-supplying soft hardwood by four to one (Beltz 1969).

Veneer Industry

As with the sawmill industry in the 1950's, new technological advances revitalized the States' veneer industry in the 1960's. Spurred by an increasing softwood resource and proximity to eastern housing markets, the southern pine plywood industry was pioneered in Arkansas in 1963. By 1968, there were four southern pine plywood mills operating in Arkansas (Beltz 1970). This startup industry shifted the veneer-log harvest in the State from entirely hardwood a decade earlier to almost exclusively softwood in 1968 and made veneer logs the number three product removed from Arkansas' forest (fig. 2).

The small amount of hardwood produced was used to supply the shrinking hardwood veneer industry. Much of the reduction in the hardwood veneer industry was associated with the container veneer sector, which was still feeling the pressures of competition from substitutes and diminishing raw material supplies. This, and increasing demand for oak and pecan furniture, caused the species composition of the State's hardwood veneer-log harvest to shift towards hard hardwoods.

Cooperage Industry

No new technology or market changes came to the rescue of the cooperage industry during the 1960's. A victim of both changing markets and resource availability, this industry has been on a downward slide since 1948. Although the harvest of cooperage bolts in Arkansas remained at 1958 levels, tight and slack cooperage industries each lost two mills, with the slack cooperage industry reduced to one mill by 1968 (figs. 2, 3).

Miscellaneous Industries

In the other nonlumber industries, the post, pole, and piling industry doubled in size and continued to increase its use of softwoods (figs. 2, 3). The number of miscellaneous specialty mills dropped considerably, while roundwood harvests increased slightly. Fuelwood consumption fell by more than half as Arkansas' population continued to become more urbanized.

INDUSTRY DEVELOPMENT FROM 1968 TO 1977

Between 1968 and 1977, the softwood resource continued to increase, albeit at a slower rate because of greater demand created by past industrial expansions, and the hardwood resource continued its downward trend. These conditions once again favored the softwood sectors of the forest industry.

Lumber Industry

As in 1968, the sawmill sector became more efficient as more sawlogs were processed through fewer mills. Over the period, 60 sawmills closed (most of these were small), while Arkansas' sawlog harvests increased (figs. 1, 2). All of the increased harvest was supported by the increasing softwood resource. The trend of increasing efficiency of larger mills also continued as 81 large mills processed 90 percent of the States' lumber output in 1977 (Bertelson 1980). These large mills also continued to process mainly softwoods, while the small mills processed mainly hardwoods.

Pulp Industry

The pulping industry added one new mill in this decade (fig. 3). This expansion, combined with capacity increases in the existing mills, caused pulpwood demand to increase as well (figs. 4, 5). As past trends would indicate, hardwood roundwood and wood residues accounted for larger proportions of the increased production over the period. The doubling in hardwood was again the result of pulping technology advances, and the jump in chipped mill residues was consistent with the increased sawlog harvest in 1977.

Veneer Industry

The veneer industry continued its transition from a hardwood to a softwood industry, with the addition of two new softwood plywood mills and the closing of seven hardwood mills during this time frame (fig. 3). Results of a veneer study in 1972 (Bertelson 1974) showed eight softwood plywood mills operating in Arkansas. This peaking of mills, followed by a subsequent drop, reflects a maturing industry in which production is concentrated in the most efficient mills and is in balance with demand. Veneer-log harvests to supply this maturing industry were almost all softwood with a minor amount of hardwood, mostly oak, supplying the dwindling hardwood veneer industry (fig. 2). This shift from soft hardwoods to oak is a reflection of changing markets and wood availability.

Cooperage Industry

While the softwood sector of the veneer industry continued to boost the veneer industry in the State, continued market changes and resource availability problems spelled the end of the slack cooperage industry and reduced the tight cooperage industry to a small percentage of its former output (figs. 2, 3).

Miscellaneous Industries

In the other nonlumber industries, the post, pole, and piling industry, like the veneer industry, seems to have gone through a maturing process. From a peak number of mills in 1968, the industry lost more than one-third of these mills by 1977 (fig. 3). Production of roundwood to supply the remaining mills shifted almost completely to softwood (fig. 2). Miscellaneous mills declined as did the harvest of roundwood to supply them. Fuelwood use continued to decline to a reported low in 1977. However, with the oil crisis of the 1970's raising the price of the alternative fuels and causing a resurgence in demand, fuelwood use may have actually hit a low earlier than 1977.

CURRENT FOREST INDUSTRY

Arkansas' current forest industry is a direct consequence of the interactions of the forest industries and forest resources of the past, as influenced by changing market conditions and technological advances. Today, Arkansas' forest industry is, on the whole, smaller and more efficient, with higher roundwood harvests supplying fewer mills (fig. 6). The industry is, however, less diverse, being dominated by three sectors (sawlog, pulpwood, and veneer), which in total accounted for 91 percent of the State's roundwood harvest in 1987. These three sectors developed around the expanding softwood resource of the State, and today, 2 out of every 3 cubic feet of roundwood harvested are softwood (fig. 7). These current conditions contrast with the situation in 1948 when the three leading forest products were sawlogs, fuelwood, and pulpwood, and harvests of hardwood equaled softwood.

Lumber Industry

In the sawmill sector, economic conditions between surveys helped to continue the past trend of concentrating more production in fewer and larger mills. In the early 1980's, increasing inflation, interest rates, and dollar values held down domestic spending, re-

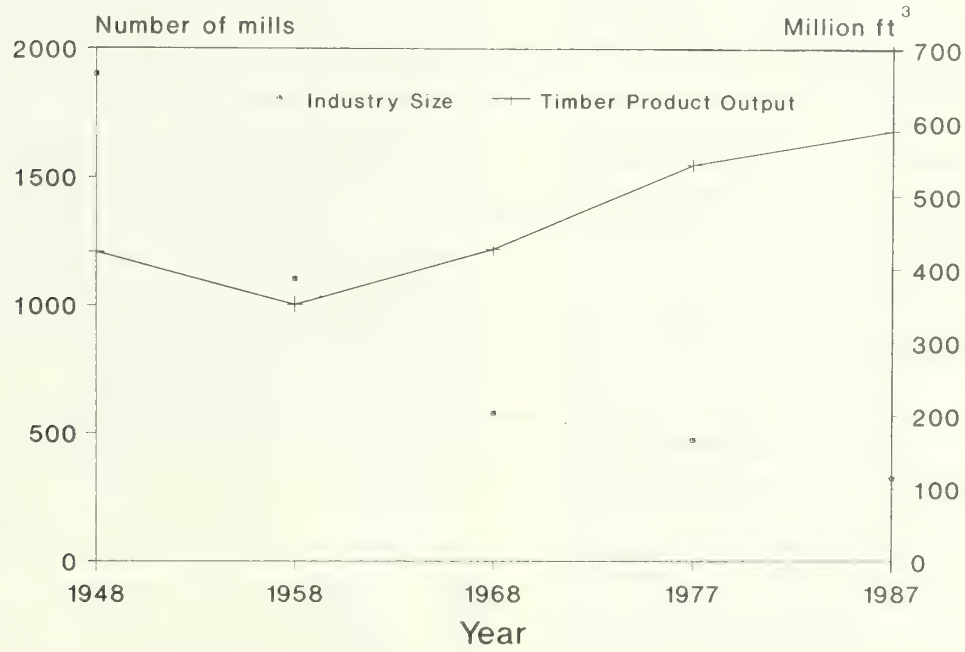

Figure 6.—*Number of primary forest product industries and timber product output in Arkansas, 1948–1987.*

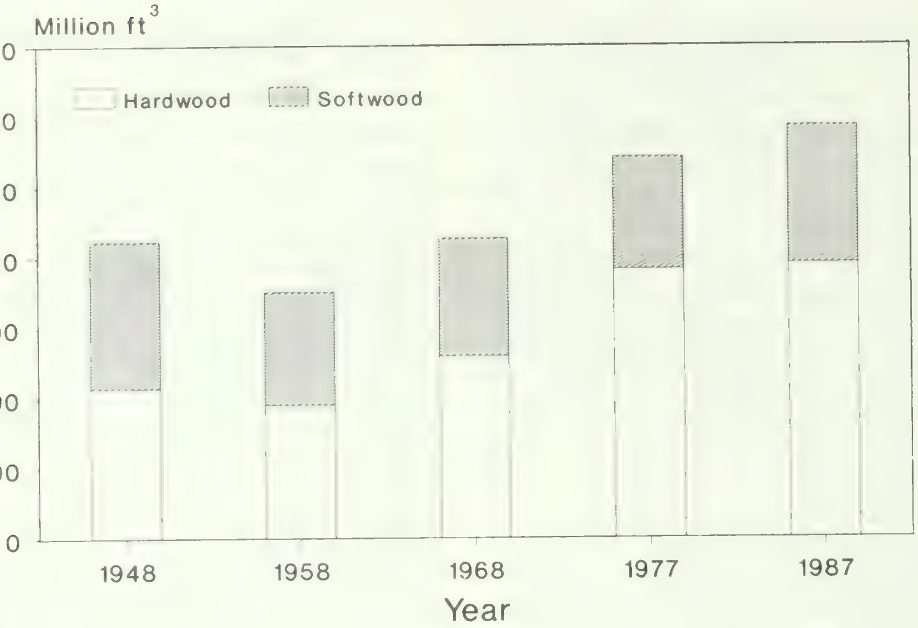

Figure 7.—*Arkansas' timber product output by species group and survey year.*

duced housing starts, and slowed exports. The depression of the lumber industry resulting from these economic conditions was further exacerbated by the infiltration of southern lumber markets by foreign competition and erosion of consumer confidence in southern lumber products due to quality problems associated with juvenile wood (Senft and others 1985).

Conditions for the lumber industry started to improve in the mid-1980's as low inflation, low interest rates, and a weak dollar strengthened both domestic consumer markets and foreign export markets and revitalized the housing industry. At the same time, the ability of southern pine lumber to take wood-preserving treatments opened new markets in outdoor uses of southern pine lumber, bolstering its share of the total domestic lumber market. As a result of these economic swings, 110 mainly small sawmills closed between 1977 and 1987, allowing more of the increased sawlog harvest to be processed by the more efficient and larger remaining mills (figs. 1, 2). In 1987, large mills processed 96 percent of the State's sawlog harvest.

Since the inception of chipping technology in the 1950's, large sawmills have processed mainly softwoods, but the proportion of hardwood processed by large mills has increased from 20 percent in 1977 (Bertelson 1980) to 25 percent in recent years. Much of this is due to pulping technology advances that have allowed increased use of all species of hardwood, eliminating much of the species sorting problems of the past and allowing the larger chipper-equipped sawmills to process more hardwood with the same economic advantages associated with softwoods. Such technological advances continue to shift production and competitive advantage to the larger and more efficient mills and at the same time eliminate the less-efficient mills.

New technologies currently in the development stages, such as Edge, Glue, and Rip, Best Opening Face, and Saw-Dry-Rip, promise to increase both the quantity and quality of lumber produced from each log (Haygreen and others 1986; Kellison 1986). Because of the capital investments needed to implement new technologies, the product recovery benefits associated with the future technologies will likely favor the larger mills and further enhance their competitive advantage over small mills. As such, Arkansas' sawmill sector will likely continue to get smaller and more efficient as more and more of the production is concentrated in the larger and more efficient mills. However, there are some developing technologies that could drastically affect the traditional sawmill industry in the State. These developing technologies include the possibility of making structural lumber and timbers from reconstituted wood chips and veneers (Kellison 1986, Pease 1987). If these developing products can be cost-competitive, and possess structural performance properties equal to or surpassing traditional lumber products, they could gain acceptance in traditional lumber markets in the future.

Pulp Industry

The story of the pulping sector of the State's forest industry has been one of continued growth from the beginning. Although the number of mills has remained the same as in 1977, pulping capacity increases have taken place at the existing mills as the economic conditions of the early 1980's forced some mills to modernize in order to stay competitive (fig. 4). Over the years, capacity increases have been answered by pulpwood production increases with hardwood roundwood and wood residues providing increasing proportions of the total pulpwood production. These trends continued into 1987, with a major rise in wood residue production, a smaller rise in hardwood roundwood production, and a fall in softwood roundwood production since 1977 (fig. 5).

The rise in hardwood roundwood is a continued response to pulping technology advances that have increased the use of hardwoods, regardless of species, in making pulp and paper products and the availability of the resource, which has generally been underutilized and available at lower costs (May 1988). This trend of increasing use of hardwoods should continue into the future, especially if developing technologies in press drying are successful in integrating more hardwood use in linerboard manufacture (Ince 1986). At some point, this trend will level off as demand causes prices and availability of hardwood to approach those of softwood furnish.

Since the inception of chipping technologies in the 1950's, wood residues have been claiming an increasing share of the State's total pulpwood furnish. This trend has continued into the 1980's, with a major jump in wood residue production. However, some of this increase in wood residue production may be due to the difficulties in distinguishing between wood residues and chipped roundwood in recent years as merchandising and satellite chipping operations have come on-line.

Because of their high quality and favorable prices, wood residues should continue to be a major source of pulping fiber. Their share of the total production may even increase in the future as more sawlog processing is concentrated in larger and more efficient mills equipped with chipping equipment. There is also the possibility that if the developing technologies in the other primary wood processing industries are successful in increasing product recovery from every log, wood residue production may decline in the future. Overall, the production of wood residues will generally be tied to the level of activity in the other primary wood processing industries in the State.

Veneer Industry

Over the years, technological advances, market changes, and resource availability have changed the veneer industry of the State from a hardwood industry in 1948 to a softwood plywood dominated industry in 1987. The number of softwood veneer mills operating in the State has remained unchanged since 1977 (fig. 3), a sign that the maturing process of the early 1970's has ceased. At the same time, softwood veneer-log harvests in the State have almost doubled in response to the turnaround in the economy in the mid-1980's (fig. 2). Although the current veneer industry would appear to be in good shape, the increasing competition from reconstituted panel products and the availability of suitable furnish provide concern for the future.

Reconstituted panel products, such as the oriented strandboard and waferboard that have been introduced in recent years, are increasing their share of traditional plywood veneer markets. Similar functional performance and lower cost are the main reasons for their market acceptance (Dickerhoof 1986, Seward and Sinclair 1988). The lower cost is due in part to lower raw material costs because these products utilize traditionally underutilized, smaller, and poorer quality trees. There are also concerns whether there will be adequate supplies of larger, high-quality softwoods to meet the traditional veneer industries' needs in the future as the acres in natural pine stands are diminished in favor of pine plantation forced on short rotations by economic realities (Klueuder and others 1988).

In order to maintain their market share in the future, the traditional veneer industry will have to become more efficient by maximizing product recovery from smaller logs. New technologies currently being developed and implemented, such as the spindleless lathe, will address these needs by allowing more product to be turned from smaller logs, while decreasing the turn around time between logs (Baldwin 1987, Kellison 1986, Spelter and Sleet 1989). At the same time, new product markets for reconstituted construction timbers made from laminated veneers may help bolster the traditional veneer industry.

Miscellaneous Industries

The remaining forest industries of the State make up a rather small portion relative to the top three sectors; however, they add diversity to Arkansas' forest industry and enhance the utilization of Arkansas' forest resource. The cooperage industry, down to one tight cooperage mill and negligible timber product output in 1987, has become virtually nonexistent today, the victim of changing markets and resource availability problems. In contrast, the post, pole, and piling industry grew rapidly, taking advantage of the expanding southern pine resource and its ability to take wood-preserving treatments. The industry peaked in the late 1960's and started its fall to present levels as part of a maturing process (fig. 3). During the period, timber production to meet the demands of this industry shifted to softwoods as markets accepted preservative-treated pines and local use of hardwood posts declined as Arkansas' population became more urbanized.

The miscellaneous specialty mills have been on a downward trend in both numbers and timber product harvests since 1948 (figs. 2, 3), mostly due to competition from substitutes. With only half as many mills operating as in 1977, this sector of the industry is composed mostly of handle and charcoal mills today. Both of these are still facing pressures from competition: plastics are replacing wood handles and mesquite charcoal is gaining popularity.

Fuelwood use in the State had been declining since 1948, but was revitalized with the onset of the oil crisis of the 1970's. The 1987 fuelwood production figures are from Greene's 1985-86 survey and are the most current figures available. Earlier estimates of fuelwood consumption, 47.3 million cubic feet in the 1984-85 season (Greene 1987) and 63.8 million cubic feet in the 1980-81 season (Skog and Watterson 1985) suggest that fuelwood consumption has been declining since the mid-1980's, when glutted oil markets again reduced prices of more conventional heating fuels. This seesaw effect will likely continue into the future as fuelwood consumption varies with the cost of more conventional heating fuels.

FUTURE FOREST INDUSTRY

It is clear that today's forest industry is the culmination of an evolutionary process involving the forest resources, forest industries, product markets, and technological advances of the past. No doubt these same factors will interact to shape the character of tomorrow's forest industry. Based on the character of the current forest industry and developing trends in the forest resources, product markets, and technological advances, it would appear that Arkansas' forest industry is at a crossroads. Will the traditional forest product industries dominant today maintain their position in the future, or will their places be usurped by new forest industries based around reconstituted wood products?

The current trend of the softwood resource of the State moving from a natural stand to a plantation-based resource has raised concerns over the availability of large-size timber in the future and possible exacerbation of quality problems associated with juvenile wood as plantation rotation ages are shortened by economic necessity (Kluender and others 1988). If these concerns are legitimate, then today's traditional lumber and veneer industries, developed around the softwood resource of the State, will have to become more efficient at converting smaller and lower quality logs into finished products. This may be made possible through implementation of new technologies being developed now or in the future. If not, then market share will undoubtedly be lost to the developing reconstituted lumber and panel product industries. These industries seem better suited to utilizing the changed softwood resources and the historically degraded hardwood resources of the State because they are less sensitive to the species, size, and quality of the raw material supply. If these new reconstituted wood product industries become dominant, they will increase competition for portions of the forest resource once predominantly the domain of the pulping industry.

Whether composition of the State's forest industry remains the same, moves toward reconstituted wood products, or reaches some middle-ground, only time will tell; but undoubtedly the forest industry of the State will continue to evolve in order to best utilize the changing forest resources and new technological advances to meet future market demands.

LITERATURE CITED

Anderson, Walter C. 1987. Technical changes that solved the southern pine lumber industry's small-log problem. Forest Products Journal. 37(6):41–45.

Baldwin, Richard F. 1987. New developments in plywood green ends. Forest Industries. 114(6):18–23.

Beltz, Roy C. 1969. Southern pulpwood production, 1968. Resour. Bull. SO-18. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 21 p.

Beltz, Roy C. 1970. Arkansas forest industries. Resour. Bull. SO-21. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 28 p.

Bertelson, Daniel F. 1974. Midsouth veneer industries, 1972. Resour. Bull. SO-47. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 11 p.

Bertelson, Daniel F. 1980. Arkansas forest industries, 1977. Resour. Bull. SO-75. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 18 p.

Dickerhoof, H. Edward. 1986. Changing U.S. softwood timber markets and international trade trends with implications for domestic forest products production. Forest Products Journal. 36(10):35–40.

Greene, John L. 1987. Characteristics of residential fuelwood markets in Arkansas. Poster: Arkansas Forestry Association Annual Meeting; 1987 October 28–29; Hot Springs, AR.

Haygreen, John; Gregerson, Hans; Holland, Irv; Stone, Robert. 1986. The economic impact of timber utilization research. Forest Products Journal. 36(10):12–20.

Ince, Peter J. 1986. New potential for increased use of hardwoods in kraft linerboard production. Forest Products Journal. 36(2):32–36.

Kellison, Robert C. 1986. Future technology and timber supply may change construction lumber products. Forest Farmer. 45(9):24–26.

Kluender, R.A.; McCoy, E.W.; and Easterling, J.K. 1988. The Arkansas forest products industry. Bull. 908. Fayetteville, AR: Arkansas Agricultural Experiment Station, University of Arkansas, Division of Agriculture. 41 p.

May, Dennis M. 1988. Midsouth pulpwood prices, 1986. Res. Note SO-344. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 3 p.

Pease, Davis A. 1987. Symposium takes a look at lumber composites. Forest Industries. 114(5):16–17.

Senft, John F.; Bendtsen, B. Allen; Galligan, William L. 1985. Weak wood: fast-grown trees make problem lumber. Journal of Forestry. 83(8):476–484.

Seward, Kevin E; Sinclair, Steven A. 1988. Retailer's perceptions of structural panel attributes and market segments. Forest Products Journal. 38(4):25–31.

Skog, Kenneth E.; Watterson, Irene A. 1985. Residential fuelwood use in the United States: 1980–81. Resour. Bull. WO-3. Washington, DC: U.S. Department of Agriculture, Forest Service. 45 p.

Smith, H.F. 1940. Primary wood-products industries in the lower South. Forest Survey Release No. 51. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 19 p.

Spelter, Henry; Sleet, George. 1989. Potential reductions in plywood manufacturing costs resulting from improved technology. Forest Products Journal. 39(1):8–15.

Sternitzke, Herbert S. 1956. Timber supplies for industry in Arkansas. Forest Resource Report No. 11. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 32 p.

Sternitzke, Herbert S. 1960. Arkansas forests. Forest Survey Release 84. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 58 p.

Sternitzke, Herbert S.; James, Lee M. 1951. Arkansas timber stands before and after cutting. Forest Survey Release 67. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 15 p.

U.S. Department of Agriculture, Forest Service. 1937a. Sawmills of the lower South. Forest Survey Release 25. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 7 p.

U.S. Department of Agriculture, Forest Service. 1937b. Forest resources of southwest Arkansas. Forest Survey Release 27. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 21 p.

U.S. Department of Agriculture, Forest Service. 1938a. Forest resources of the north Arkansas delta. Forest Survey Release 32. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 21 p.

U.S. Department of Agriculture, Forest Service. 1938b. Forest resources of the Ouachita mountain region of Arkansas. Forest Survey Release 36. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 27 p.

Van Sickle, Charles C. 1970. Arkansas forest resource patterns. Resour. Bull. SO-24. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 34 p.

Winter, R.K. 1939. Forest Resources of the south Arkansas delta. Forest Survey Release 46. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 24 p.

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May, Dennis M. 1990. Development and status of Arkansas' primary forest products industry. Resour. Bull. SO-152. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 11 p.

The development of Arkansas' primary forest products industry is presented by following the changes in numbers and types of mills operating through time as well as the State's production of roundwood to supply the changing industry.

Keywords: Cooperage, fuelwood, pulpwood, sawlog, veneer.

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Forest Statistics for Southwest-North Alabama Counties — 1990

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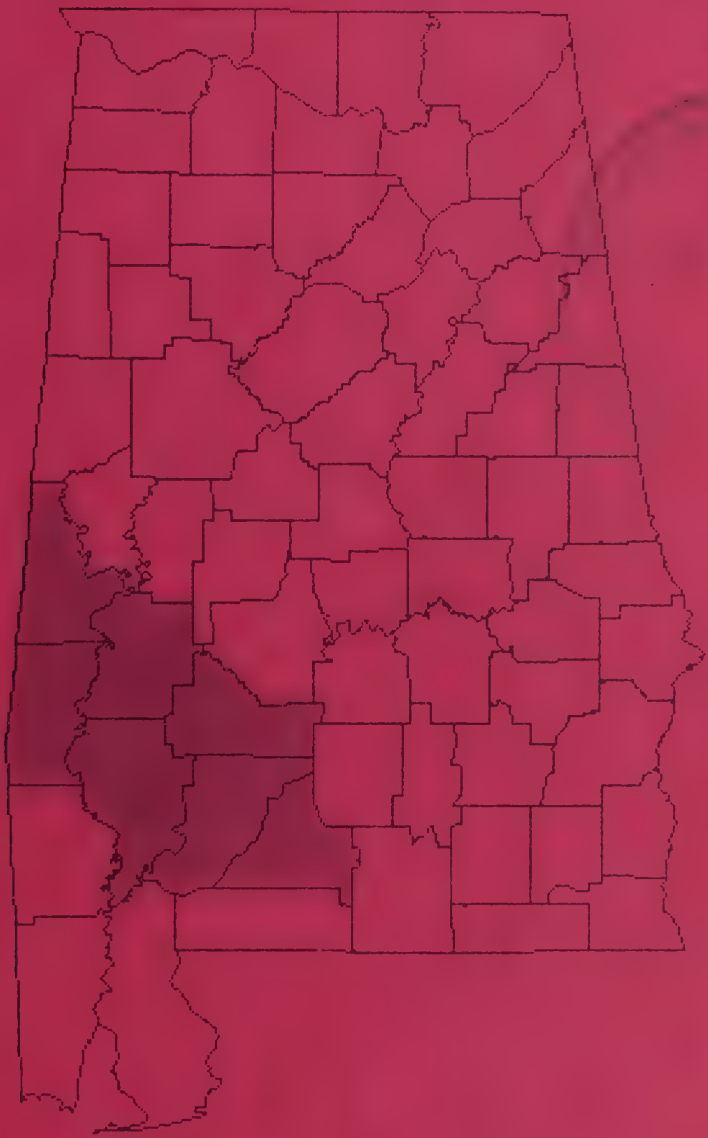

SUMMARY

The 1990 forest inventory of Southwest-North Alabama revealed the following:

- Timberland area is 3,463.4 thousand acres, an increase of 2 percent.
- The region is the most heavily forested and has the largest concentration of high-site timberland of all the forest survey regions in Alabama.
- The area of pine-type timberland increased by 22 percent. The area of oak-pine and hardwood forest types decreased by 9 percent.
- The area of planted pine stands more than doubled. Half of the pine-type timberland is of artificial origin, compared to 29 percent in 1982.
- Live-tree inventory volume totals 4,607.6 million cubic feet, an increase of 5 percent. The volume of live softwoods increased by 9 percent. The volume of live hardwoods showed no significant change.
- Sawtimber inventory volume increased by 19 percent for both softwoods and hardwoods.
- Average net growth of live trees increased by 16 percent since the previous inventory. The net growth of softwoods increased by 9 percent. The net growth of hardwoods increased by 28 percent.
- The removals of live trees increased by 12 percent due to a 44 percent increase in hardwood removals. Softwood removals decreased slightly, by 3 percent.
- The growth-to-removals ratio is 1.1:1.0 for both softwoods and hardwoods. The softwood ratio is 1.1:1.0, compared to 1.0:1.0 for the period from 1972-1981. The hardwood ratio is 1.1:1.0, compared to 1.2:1.0 previously.

FOREWORD

The USDA-Forest Service, Southern Forest Experiment Station, Forest Inventory and Analysis unit (SO-FIA), conducts forest inventories covering the States of Alabama, Arkansas, Louisiana, Mississippi, Oklahoma, Tennessee, Texas, and the island of Puerto Rico.

The SO-FIA forest inventories are part of a nationwide effort originally authorized by the McSweeney-McNary Act of 1928. More recent legislation pertinent to the SO-FIA mission includes the Forest and Rangeland Renewable Resources Planning Act of 1974 and the Forest and Rangeland Renewable Resources Research Act of 1978. The SO-FIA mission is to develop, analyze, and maintain forest resource information that is essential for formulation of forest policies and programs.

ACKNOWLEDGMENTS

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The following members of the SO-FIA field staff completed the field measurements:

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[1] Core tables are presented in response to the Southern Industrial Forestry Research Council's recommendations. These ables are identical among Forest Inventory and Analysis units in the eastern United States.

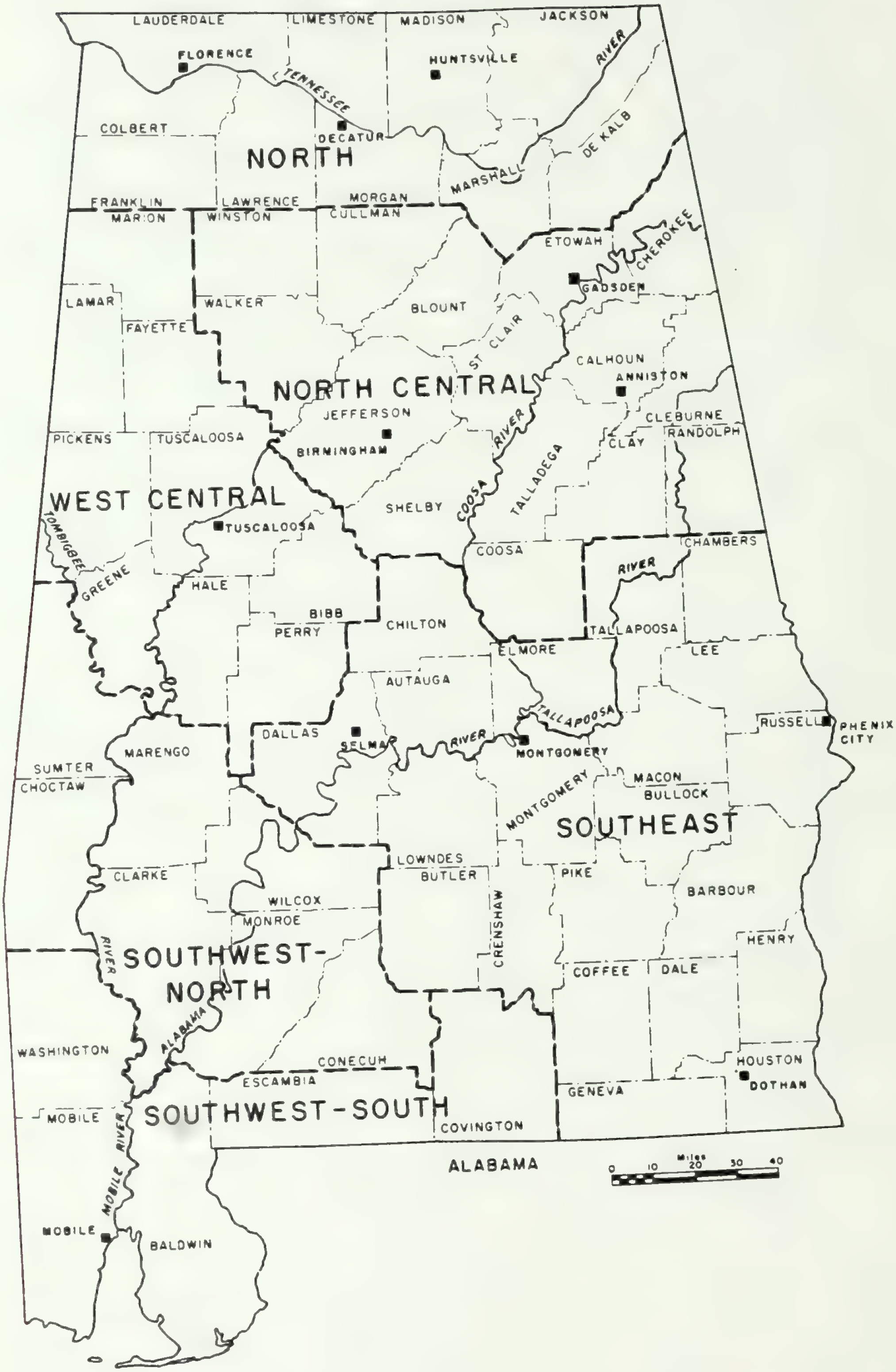

Figure I.—*Forest survey regions in Alabama.*

Forest Statistics for Southwest-North Alabama Counties — 1990

William H. McWilliams, Patrick E. Miller, and John S. Vissage

INTRODUCTION

Tabulated results were derived from data obtained during a recent forest inventory of Southwest-North Alabama (fig. I). Core tables (1 to 25) are compatible among Forest Inventory and Analysis units in the Eastern U.S. Other tables (26 to 43) supplement the information contained in the core tables. Comparisons are made between results of the 1990 inventory and previous inventories conducted in 1982 and 1972.

METHODS

The SO-FIA uses a two-phase sample of temporary aerial-photo points and a systematic grid of permanent ground plots. The area of forested land was determined by photointerpretation of temporary points and field checks of permanent plots. Field measurements were conducted on a subset of permanent plots spaced 3 miles apart. Tree data were collected on measurement plots that were forested at the time of the current inventory, or were forested at the time of the previous inventory.

Each measurement plot consisted of 10 satellite points spread over an acre of forest. At each point, trees 5.0 inches in diameter at breast height and larger were selected for measurement on a variable-radius plot defined by a 37.5 BAF prism. Trees from 1.0 to 4.9 inches in diameter were tallied on 1/275 acre fixed plots at the first three points and at any remaining points where fewer than two trees 5.0 inches in diameter or larger were tallied. If no trees greater than 1.0 inch were tallied at a point, then seedlings were tallied. Several plot-level measurements relating to timber and non-timber assessment were also collected.

Tree data were used to estimate volumes, basal area, number of trees, and other per-acre variables. Ownership information was obtained for each measurement plot using tax records and other sources. Per acre estimates were expanded using county-level factors derived as part of the forest area determination. Thus, estimates at the county level may not match exactly with known totals for a particular variable.

In order to achieve greater compatibility among Forest Inventory and Analysis units, a modified tree classification system has been in effect since the 1988 inventory of Arkansas. Tree grade 5 is used to designate trees capable of producing at least one 12-foot log or two 8-foot logs in the saw-log portion, but not capable of producing a gradable 12-foot log in the butt 16-foot section. These trees - formerly classed as rough or rotten - are now included in growing stock. Any comparisons with previous estimates of growing stock are based on data that has been reprocessed to account for the change in definition. Because of the revised definition, and to better assess changes in whole-forest conditions; analysis of trends in inventory volume, growth, removals, and mortality will focus on live trees.

SAMPLING ERROR

The sampling methods were designed to achieve suitable sampling errors for estimates of area and volume at the State level. Sampling error increases as the area or volume considered decreases. The sampling errors presented in table I, equal to one standard deviation for the sample data, may be used to compute confidence intervals for population estimates. For example, at the 95 percent confidence level, the confidence interval for live-tree volume (in million cubic feet) is:

$$4{,}607.6 \pm 1.96\,(0.034 \times 4{,}607.6) = 4{,}607.6 \pm 307.1$$

where 1.96 is the number of standard deviations. This confidence interval indicates a 0.95 probability that the range, 4,300.5 to 4,914.7 million cubic feet, will cover the true live-tree inventory volume.

The results are reported for individual counties so that users may combine counties as desired. It is not recommended that individual county data be used in isolation. The user should combine data for as many counties as possible. Sampling error for a combination of counties may be estimated using the following formula:

$$SE_g = \frac{SE_t \sqrt{X_t}}{\sqrt{X_g}}$$

where:

SE = standard error of estimate (expressed as a percent)
X = variable of interest (area or volume)
g = group of counties to be combined
t = total for the unit.

For example, the estimate of sampling error for live-tree volume in Clarke, Conecuh, Marengo, Monroe, and Wilcox counties is 4.0 percent. The 95 percent confidence interval for live-tree volume is 3,328.5 ± 261.0 million cubic feet.

RESULTS

Area

The topography of Southwest-North Alabama ranges from hills to rolling uplands that are common to the East Gulf

Table I—*Sampling errors*[1] *for timberland, live trees, growing stock, and sawtimber, Southwest-North Alabama Counties, 1990*

County	Timberland	Live trees			Growing stock			Sawtimber volume
		Volume	Growth	Removals	Volume	Growth	Removals	
	Percent							
Choctaw	0.9	8.3	7.5	19.0	8.4	8.0	19.0	10.6
Clarke	1.1	6.3	6.5	15.6	6.4	6.5	15.5	8.3
Conecuh	1.9	11.1	13.4	22.8	11.5	13.4	23.0	18.2
Marengo	1.3	9.8	9.9	18.2	9.9	9.6	18.3	11.7
Monroe	1.5	8.1	7.1	15.3	8.3	7.4	15.3	10.9
Sumter	1.5	11.4	11.9	24.0	11.6	12.3	24.0	15.4
Wilcox	2.1	9.7	9.9	18.9	10.0	10.3	19.1	13.1
All counties	0.6	3.4	3.4	7.2	3.4	3.5	7.2	4.5

[1] By random-sampling formula.

Coastal Plain. The Tombigbee and Alabama River systems flow through the area, along with many creeks and streams. Forests cover 3.5 million acres or 80 percent of the land area, making this the most heavily forested survey region in Alabama. All of the forest land is classified as timberland capable of producing industrial wood products. The area of timberland increased slightly, by 2 percent.

The region is characterized by a large concentration of highly productive timberland. Eighty-six percent of the timberland is capable of growing 85 cubic feet of wood (roughly a cord) or more per acre annually. Nearly half of the timberland is capable of growing 120 cubic feet or more annually.

Private owners dominate timberland ownership with 99 percent of the region's timberland. Nonindustrial private owners control 61 percent of the timberland. Nonindustrial timberland is divided among miscellaneous individuals (58 percent), farmers (35 percent), and miscellaneous corporations (other than forest industry)(7 percent). Farmer-owned timberland was the only ownership class to show a decrease since 1982 (by 19 percent). Forest industry owns a large share of the timberland with 38 percent. The estimate of forest industry timberland includes 180.2 thousand acres under long-term lease from nonindustrial private owners.

Pine forests account for most of the timberland (43 percent of the total area). The area of pine forest, 1.5 million acres, increased by 22 percent. Most of the pine-type timberland (93 percent) is made up of loblolly-shortleaf stands, of which, nearly all are stands dominated by loblolly pine. The most significant trend pertaining to pine forests was a more than doubling of the area of planted pine stands. The increase in planted stands is a continuation of a trend that began during the 1970's. Between 1972 and 1982, the area of planted pine stands increased by 130 percent. However, the net increase in planted pine acreage was much less than the more recent increase. Additions of planted pine acreage averaged 19.7 thousand acres per year between 1972 and 1982. This compares with an average of 49.3 thousand acres per year between 1982 and 1990. Planted pine stands now make up half of the pine-type timberland, or 742.3 thousand acres. There are an additional 165.0 thousand acres with evidence of planting or direct seeding that are classified as oak-pine and hardwood forest types due to hardwood stocking.

Oak-pine forests are defined as stands where the majority of stocking is in hardwood species, but are at least 25 percent stocked with pines. The area of oak-pine forests decreased by 6 percent, totaling 642.6 thousand acres (18 percent of total timberland).

Hardwood forests occur on 39 percent of the timberland, or 1.3 million acres. Hardwood-type timberland decreased by 10 percent. Sixty-one percent of the hardwood forest is comprised of oak-hickory stands. The other 38 percent consists of oak-gum-cypress forests.

The distribution of timberland by stocking class gives an indication of overall forest vigor. Stocking is assessed by comparing existing stand density to a standard that represents full stocking or 100 percent (based on number of trees per acre). The optimal range of stocking is between 60 and 100 percent of the standard. Fifty-one percent of the timberland is in the optimal stocking class, an increase of 17 percent. The area of fully-stocked stands (from 100 to 130 percent stocked) increased by 15 percent. The area with low stocking (less than 60 percent stocked) decreased by 37 percent.

Inventory

The volume of live trees increased by 5 percent, totaling 4.6 billion cubic feet. The volume of live trees includes the merchantable sound-wood volume of growing-stock trees, rough trees, and rotten trees that are at least 5.0 inches in diameter at breast height. The growing-stock component of live-tree volume - the volume of trees with good management potential - comprises 94 percent of the live-tree volume.

Softwood volume represents 54 percent of the live-tree inventory, or 2.5 billion cubic feet. The volume of softwoods increased by 9 percent. Loblolly pine is the most abundant species, with 66 percent of the softwood inventory. Shortleaf pine is second with 17 percent, followed by several less prevalent softwood species that include spruce pine (6 percent), slash pine (4 percent), and longleaf pine (3 percent).

Changes in the distribution of live-tree volume by diameter class, or the stock table, provide insight into the nature of inventory change. Most of the changes in the

Table II – *Components of average annual change in the volume of live trees by inventory period and species group, Southwest-North Alabama Counties, 1990*

Inventory period and species group	Gross Growth		
	Net growth	Mortality	Removals
	Million cubic feet		
1972 to 1981:			
Softwoods	132.1	15.6	130.1
Hardwoods	73.1	28.0	59.7
Total	205.2	43.6	189.8
1982 to 1989:			
Softwoods	144.5	18.0	126.5
Hardwoods	93.4	19.7	85.7
Total	237.9	37.7	212.2

softwood stock table have taken place in the 6- through 12-inch classes. Over the past two inventory periods, there have been net increases in the 6- and 8-inch classes. The 10- and 12-inch classes have undergone erratic changes due to the impact of multiple factors, such as ingrowth and removals. With the exception of the 14-inch class, which has shown little change, increases occurred in the larger diameter classes.

Hardwood volume is 46 percent of the live-tree volume, or 2.1 billion cubic feet. The volume of hardwoods is essentially unchanged since 1982. The most abundant hardwood species are red oaks (27 percent of the hardwood volume), sweetgum (20 percent), white oaks (11 percent), gums (7 percent), hickories (6 percent), and yellow poplar (6 percent).

Changes in the hardwood stock table were minor, except for a sharp decrease in the 10-inch class between 1972 and 1982. The 10-inch class now totals about the same as it did in 1972. Some increases occurred in the larger diameter classes.

The volume of sawtimber, 16.3 billion board feet (International 1/4-inch rule), increased by 19 percent for both softwoods and hardwoods. The sawtimber inventory is 64 percent softwood and 36 percent hardwood.

Components of Change

Changes in the volume of live trees depend on three components: gross growth, mortality, and removals. Annual estimates of change are based on the period from the year of the previous inventory through the year prior to the present inventory. Gross growth of live trees was 275.6 million cubic feet for the period prior to 1990, an 11 percent increase over the period from 1972 to 1981 (table II).

Net growth - equal to gross growth minus mortality - increased by 16 percent. Softwoods contributed 61 percent of the total net growth and hardwoods contributed 39 percent. The net growth of softwoods increased by 9 percent and the net growth of hardwoods increased by 28 percent.

Removals of live trees, 212.2 million cubic feet, was 12 percent higher than the period prior to 1982. Removals were 60 percent softwood and 40 percent hardwood. Softwood removals decreased by 3 percent. Hardwood removals increased by 44 percent.

The ratio of net growth-to-removals is one measure of a forest's capacity to expand in volume. A ratio greater than 1.0:1.0 usually indicates increases in inventory volume. For the current inventory period, the growth-to-removals ratio was 1.1:1.0; remaining constant since the previous inventory period. The ratio was 1.1:1.0 for both softwoods and hardwoods. The softwood ratio increased from 1.0:1.0 for the previous period. The hardwood ratio tightened slightly, mainly due to the increase in hardwood removals. The hardwood ratio was 1.2:1.0 for the previous period.

CONCLUSIONS

Southwest-North Alabama remains as the State's eminent timber-producing region, as well as a major source of other forest-related resources. Forest management activity has intensified substantially over the past two decades, particularly the management of pine stands. This trend is illustrated by a two-fold increase in the area of artificially-regenerated pine stands and an improvement in general stocking characteristics.

The region continues to satisfy a high demand for timber. The softwood growth-to-removals relationship is tight, but has improved since the previous inventory period. Further improvement is probable in light of the finding that at least one-fourth of the region's pine-type timberland is less than 10 years old. Ingrowth from this population of young stands will provide a boost to softwood growth over the next decade. Ingrowth from earlier establishment of pine stands has already caused expansion of volume in the 6- and 8-inch diameter classes. However, future prospects for the softwood resource will also depend on future harvest levels and continued emphasis on management.

The margin of hardwood growth over removals has narrowed over the past eight years due to a 44 percent increase in removals. A decrease in the area of hardwood-type timberland and a decrease in the volume of pole-sized hardwoods suggest the need for close monitoring of the hardwood resource in the future. So far, recent resource developments have not had a negative impact on the hardwood sawtimber resource. The outlook for hardwoods will depend on future harvest levels, the establishment of young stands containing hardwoods, and management of existing stands. The increased demand for hardwoods could provide economic incentive for the needed intensification of hardwood management.

DEFINITION OF TERMS

Average net annual growth.—Average net annual volume increase for the inventory period.

Average annual mortality.—Average annual sound-wood volume of trees dying from natural causes.

Average annual removals.—Average net annual volume of trees removed from the inventory by harvesting, cultural operations (such as timber-stand improvement), land clearing, or changes in land use.

Commercial species.—Tree species which normally develop into trees suitable for industrial wood products.

Forest land.—Land at least 16.7 percent stocked by forest trees of any size, or formerly having such tree cover, and not currently developed for nonforest use.

Forest type.—A classification of forest land based upon the species forming a plurality of live-tree stocking.

Growing-stock trees.—Live trees of commercial species. Rough and rotten trees are excluded.

Growing-stock volume.—The cubic-foot volume of sound wood in growing-stock trees at least 5.0 inches in diameter at breast height, from a 1-foot stump to a minimum 4.0-inch top diameter outside bark of the central stem, or to the point where the central stem breaks into limbs.

Live trees.—Commercial and noncommercial tree species of sapling size or larger.

Live-tree volume.—The cubic-foot volume of sound wood in live trees at least 5.0 inches in diameter at breast height, from a 1-foot stump to a minimum 4.0-inch top diameter outside bark of the central stem, or to the point where the central stem breaks into limbs.

Natural stands.—Stands with no evidence of artificial regeneration. This includes those established by seed tree regeneration methods.

Noncommercial species.—Tree species of typically small size, poor form, or inferior quality which normally do not develop into trees suitable for industrial wood products.

Planted stands.—Stands with evidence of planting or direct seeding.

Poletimber trees.—Live trees at least 5.0 inches in diameter at breast height, but smaller than sawtimber size.

Reserved timberland.—Productive public forest land withdrawn from timber utilization through statute or administrative regulations.

Rotten trees.—Live trees of commercial species that do not contain at least one 12-foot log or two 8-foot logs in the saw-log portion, now or prospectively, primarily because of rot.

Rough trees.—Live trees of commercial species that do not contain at least one 12-foot log or two 8-foot logs in the saw-log portion, now or prospectively, primarily because of roughness or poor form. Also included are live trees of noncommercial species.

Saplings.—Live trees at least 1.0 inches but less than 5.0 inches in diameter at breast height.

Sawtimber trees.—Live trees that contain at least one 12-foot log or two 8-foot logs in the saw-log portion, and meet regional specifications for freedom from defect. Softwoods must be at least 9.0 inches in diameter at breast height and hardwoods at least 11.0 inches in diameter at breast height.

Sawtimber volume.—Sound-wood volume of the saw-log portion of growing-stock sawtimber trees in board feet (International 1/4-inch rule) and in cubic feet.

Seedlings.—Live trees less than 1.0 inch in diameter at breast height and greater than one foot tall for hardwoods, greater than six inches tall for softwoods, and greater than one-half inch in diameter at ground level for longleaf pine.

Select red oaks.—A classification of several red oak species composed of: cherrybark, Shumard, and northern red oaks.

Select white oaks.—A classification of several white oak species composed of: white, swamp chestnut, swamp white, chinkapin, Durand, and bur oaks.

Site class.—A classification of forest land in terms of inherent capacity to grow crops of industrial wood.

Stand-size class.—A classification of forest land based on the diameter class of live trees on the sampled area; that is, sawtimber, poletimber, or sapling and seedling.

Timberland.—Forest land that is producing, or is capable of producing, crops of industrial wood and not withdrawn from timber utilization. Timberland is synonymous with "commercial forest land" in prior reports.

Tree grade.—A classification of the volume of the saw-log portion of sawtimber trees, based on: 1) the log grade of the butt log, or 2) ability to produce at least one 12-foot or two 8-foot logs in the upper-section of the saw-log portion.

Woodland.—Forest land incapable of yielding crops of industrial wood because of adverse site conditions.

CORE TABLES 1-25

Table 1—*Area by county and land class, Southwest-North Alabama Counties, 1990*

County	All land[1]	Forest land				Nonforest land
		Total	Timberland[2]	Woodland[3]	Reserved timberland	
	Thousand acres					
Choctaw	582.0	508.7	508.7	...	...	73.4
Clarke	787.3	723.5	723.5	...	...	63.8
Conecuh	546.5	458.5	458.5	...	...	88.1
Marengo	628.4	402.4	402.4	...	...	226.0
Monroe	652.3	527.3	527.3	...	...	125.0
Sumter	580.6	401.6	401.6	...	...	179.0
Wilcox	565.2	441.5	441.5	...	...	123.7
All counties	4342.4	3463.4	3463.4	...	...	878.9

[1] From U.S. Bureau of the Census.

[2] Forest land (formerly termed commercial forest land) that is producing or capable of producing at least 20 cubic feet of industrial wood per acre per year. Includes areas which may be inaccessible or inoperable by current standards. Excludes reserved timberland.

[3] Forest land incapable of producing 20 cubic feet of industrial wood per acre per year under natural conditions because of adverse site conditions.

Table 2—*Area of timberland by county and ownership class, Southwest-North Alabama Counties, 1990*

County	All ownerships	National forest	Misc. federal	State	County and municipal	Forest industry[1]	Farmer	Corporate[2]	Individual[2]
	Thousand acres								
Choctaw	508.7	...	...	...	...	167.6	57.8	46.2	237.0
Clarke	723.5	...	...	5.4	5.4	375.4	27.2	21.8	288.3
Conecuh	458.5	...	...	...	...	187.0	150.8	...	120.7
Marengo	402.4	...	...	...	...	121.9	85.4	18.3	176.8
Monroe	527.3	...	5.2	5.2	...	198.4	130.5	20.9	167.1
Sumter	401.6	...	6.3	...	...	112.9	100.4	37.6	144.3
Wilcox	441.5	...	5.7	5.7	5.7	149.1	183.5	11.5	80.3
All counties	3463.4	...	17.2	16.4	11.2	1312.4	735.6	156.3	1214.4

[1] Includes land leased to forest industry.

[2] Indian land will be classed as corporate or individual as defined by the Bureau of Indian Affairs.

Table 3—*Area of timberland by county and forest type group, Southwest-North Alabama Counties, 1990*

		Forest type group							
		Longleaf-slash pine		Loblolly-shortleaf pine					
County	Total	Planted	Natural	Planted	Natural	Oak-pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood
	Thousand acres								
Choctaw	508.7	...	...	104.0	121.4	98.3	109.8	75.1	...
Clarke	723.5	16.3	5.4	114.2	168.6	152.3	136.0	130.6	...
Conecuh	458.5	12.1	18.1	120.7	54.3	72.4	126.7	54.3	...
Marengo	402.4	...	...	48.8	109.7	67.1	103.6	73.2	...
Monroe	527.3	31.3	15.7	99.2	78.3	99.2	135.7	67.9	...
Sumter	401.6	...	...	75.3	100.4	50.2	106.7	62.7	6.3
Wilcox	441.5	...	5.7	120.4	63.1	103.2	97.5	51.6	...
All counties	3463.4	59.7	44.9	682.6	695.8	642.6	816.0	515.4	6.3

Table 4—*Area of timberland by county and stand-size class, Southwest-North Alabama Counties, 1990*

		Stand-size class		
County	All classes	Sawtimber	Poletimber	Sapling-seedling
Choctaw	508.7	219.7	127.2	161.8
Clarke	723.5	353.6	163.2	206.7
Conecuh	458.5	108.6	120.7	229.2
Marengo	402.4	176.8	61.0	164.6
Monroe	527.3	229.7	83.5	214.0
Sumter	401.6	156.9	100.4	144.3
Wilcox	441.5	160.6	86.0	195.0
All counties	3463.4	1405.8	741.9	1315.7

Table 5—*Area of timberland by county and site class, Southwest-North Alabama Counties, 1990*

		Site class (cubic feet/acre/year)				
County	All classes	> 165	120-165	85-120	50-85	< 50
	Thousand acres					
Choctaw	508.7	98.3	161.8	213.9	28.9	5.8
Clarke	723.5	141.4	288.3	190.4	103.4	...
Conecuh	458.5	66.4	168.9	187.0	36.2	...
Marengo	402.4	6.1	97.5	237.8	54.9	6.1
Monroe	527.3	52.2	182.7	172.3	99.2	20.9
Sumter	401.6	37.6	138.0	182.0	37.6	6.3
Wilcox	441.5	34.4	131.9	172.0	97.5	5.7
All counties	3463.4	436.4	1169.3	1355.3	457.6	44.8

Table 6—*Area of timberland by county and stocking classes of growing-stock trees, Southwest-North Alabama Counties, 1990*

County	All classes	Stocking class (percent)				
		> 130	100-130	60-100	16.7-60	< 16.7
	Thousand acres					
Choctaw	508.7	28.9	132.9	300.6	46.2	...
Clarke	723.5	43.5	195.8	408.0	70.7	5.4
Conecuh	458.5	24.1	199.1	205.1	30.2	...
Marengo	402.4	30.5	158.5	182.9	30.5	...
Monroe	527.3	20.9	187.9	261.0	57.4	...
Sumter	401.6	6.3	112.9	207.1	69.0	6.3
Wilcox	441.5	17.2	189.2	206.4	28.7	...
All counties	3463.4	171.4	1176.5	1771.1	332.7	11.7

Table 7—*Area of timberland by forest type and ownership class, Southwest-North Alabama Counties, 1990*

Forest type[1]	All ownerships	National forest	Other public	Forest industry	Forest industry-leased	Other private
	Thousand acres					
Longleaf-slash pine	104.6	...	...	72.3	5.2	27.1
Loblolly-shortleaf pine	1378.5	...	11.2	498.9	74.3	794.1
Softwood total	1483.1	...	11.2	571.2	79.6	821.2
Oak-pine	642.6	...	10.7	241.8	28.8	361.4
Oak-hickory	816.0	...	5.7	171.8	27.7	610.7
Oak-gum-cypress	515.4	...	17.2	141.1	44.1	313.0
Elm-ash-cottonwood	6.3	...	...	6.3	...	...
Hardwood total	1980.3	...	33.6	561.0	100.6	1285.1
All types	3463.4	...	44.8	1132.2	180.2	2106.3

[1] Forest type is based on species plurality of all live trees. Mixed types that in combination contain a majority of hardwood stocking are hardwood types.

Table 8—*Area of timberland by ownership class and stocking classes of growing-stock trees, Southwest-North Alabama Counties, 1990*

Ownership class	All classes	Stocking class (percent)				
		> 130	100-130	60-100	16.7-60	< 16.7
	Thousand acres					
Other public	44.8	5.7	16.4	12.0	10.7	...
Forest industry	1132.2	62.4	432.9	546.6	90.3	...
Forest industry-leased	180.2	17.6	67.6	83.5	11.5	...
Other private	2106.3	85.7	659.7	1129.0	220.2	11.7
All ownerships	3463.4	171.4	1176.5	1771.1	332.7	11.7

Table 9—*Area of timberland by forest type and stand-size class, Southwest-North Alabama Counties, 1990*

Forest type[1]	All classes	Stand-size class		
		Sawtimber	Poletimber	Sapling-seedling
Longleaf-slash pine	104.6	27.9	55.8	20.9
Loblolly-shortleaf pine	1378.5	569.4	329.9	479.2
Softwood total	1483.1	597.4	385.7	500.0
Oak-pine	642.6	243.5	126.7	272.5
Oak-hickory	816.0	234.8	131.0	450.2
Oak-gum-cypress	515.4	323.9	98.5	93.0
Elm-ash-cottonwood	6.3	6.3	...	...
Hardwood total	1980.3	808.4	356.2	815.7
All types	3463.4	1405.8	741.9	1315.7

[1] Forest type is based on species plurality of all live trees. Mixed types that in combination contain a majority of hardwood stocking are hardwood types.

Table 10—*Number of live trees on timberland by species and diameter class, Southwest-North Alabama Counties, 1990*

Species	All classes	Diameter class (inches at breast height)											
		1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Longleaf-slash pines	47071	7295	16065	13092	6209	1841	1049	838	327	197	78	80	...
Shortleaf-loblolly pines	531993	210527	132758	80259	50777	22578	14766	9566	5584	2796	1397	965	18
Other yellow pines	13256	4612	2528	1151	1457	1034	821	519	345	366	184	239	...
Cypress	2822	977	499	...	187	147	176	200	90	222	134	165	25
Other softwoods	26400	15336	6651	2224	1107	726	148	117	65	...	21	5	...
Total softwoods	621541	238747	158501	96725	59737	26325	16961	11240	6411	3581	1815	1455	43
Select white oaks	39799	24655	3697	4868	2578	1265	1033	624	407	263	165	213	30
Select red oaks	9631	4508	1054	1545	225	601	543	284	233	296	69	209	64
Other white oaks	34857	17452	7939	3856	2072	1328	975	579	254	125	90	138	49
Other red oaks	374628	280250	53163	14707	10126	5777	3926	2636	1490	1001	616	813	122
Hickory	66249	51063	5712	3566	2006	1027	1090	810	387	274	148	149	16
Hard maple	8156	5252	2602	...	71	46	118	43	14	...	...	9	...
Soft maple	140406	107962	22771	5319	2673	997	372	172	46	36	10	43	4
Beech	15840	11992	1029	912	529	337	130	287	61	238	71	216	40
Sweetgum	473563	342094	77204	28472	13388	6435	2493	1632	930	368	346	188	12
Tupelo-blackgum	89081	66002	8463	5447	3037	2423	1492	1219	518	284	79	106	12
Ash	32559	19242	7825	1878	1001	989	702	224	368	183	61	75	11
Cottonwood-aspen	583	559	...	...	...	...	...	...	14	...	10	...	...
Basswood	6393	5514	479	...	110	64	138	21	34	24	9	...	...
Yellow-poplar	42696	28952	6663	1876	1815	775	875	580	498	240	164	221	37
Black walnut	608	...	526	...	63	...	...	20	...	...	...	...	...
Other hardwoods	453334	346853	70676	20864	7167	3418	1829	1038	626	354	271	218	20
Total hardwoods	1788382	1312351	269802	93310	46860	25483	15717	10169	5880	3684	2110	2598	418
Noncommercial	261343	213021	33957	8046	4122	1438	532	155	63	...	10	...	...
All species	2671267	1764119	462260	198082	110718	53246	33210	21563	12355	7265	3934	4053	461

Table 11—*Number of growing-stock trees on timberland by species and diameter class, Southwest-North Alabama Counties, 1990*

Species	All classes	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
		Diameter class (inches at breast height)											
	Thousand trees												
Longleaf-slash pines	45374	5859	16065	12860	6209	1841	1020	838	327	197	78	80	...
Shortleaf-loblolly pines	496998	187973	125733	77420	49816	21839	14326	9384	5451	2721	1387	929	18
Other yellow pines	9968	1955	1975	1151	1457	990	786	519	345	366	184	239	...
Cypress	2668	977	499	...	106	107	151	200	90	222	134	157	25
Other softwoods	21040	11687	5593	1767	1107	603	148	92	32	...	10	...	...
Total softwoods	576046	208452	149865	93198	58695	25380	16431	11033	6244	3506	1794	1405	43
Select white oaks	27601	14922	2113	4280	2514	1231	921	601	393	252	165	189	21
Select red oaks	8208	3357	1054	1418	166	601	513	284	233	258	69	200	53
Other white oaks	21441	8761	4747	3245	1617	1237	731	536	222	96	79	129	39
Other red oaks	281755	199728	46303	11853	9075	5294	3427	2464	1447	864	545	680	76
Hickory	43932	30633	4660	3105	1928	947	1005	748	374	274	129	121	8
Hard maple	3471	3194	...	...	71	46	118	18	14	...	...	9	...
Soft maple	89362	67441	14275	4663	1817	759	204	106	32	36	10	18	...
Beech	11213	8376	530	821	529	292	130	220	61	92	30	117	16
Sweetgum	339093	228769	61755	24444	12339	6306	2275	1545	852	330	315	151	12
Tupelo-blackgum	49189	32188	5757	3177	2720	2205	1155	1115	420	261	79	101	12
Ash	19643	10421	4691	1351	899	989	530	224	276	157	52	49	4
Cottonwood-aspen	569	559	...	...	...	...	...	...	...	...	10	...	...
Basswood	5846	4988	479	...	110	64	138	...	34	24	9	...	...
Yellow-poplar	38354	25335	6184	1876	1689	741	875	580	498	180	164	202	29
Black walnut	608	...	526	...	63	...	...	20	...	...	...	...	...
Other hardwoods	285361	213035	46446	14065	5392	2831	1640	776	550	279	180	153	16
Total hardwoods	1225649	851709	199520	74298	40929	23542	13662	9236	5407	3103	1836	2119	286
All species	1801695	1060161	349385	167496	99624	48922	30092	20269	11652	6608	3630	3525	329

Table 12—*Volume of growing stock on timberland by species and diameter class, Southwest-North Alabama Counties, 1990*

Species	All classes	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
		Diameter class (inches at breast height)									
	Million cubic feet										
Longleaf-slash pines	190.6	36.3	36.2	25.7	24.7	26.2	15.3	11.0	5.9	9.3	...
Shortleaf-loblolly pines	2047.2	187.0	308.4	290.4	316.3	317.1	252.8	164.3	109.9	96.3	4.6
Other yellow pines	139.5	3.3	10.1	13.9	16.7	17.3	14.7	22.5	14.8	26.1	...
Cypress	56.5	...	0.5	1.2	3.1	5.8	3.3	11.3	9.1	15.2	7.0
Other softwoods	19.4	3.7	5.5	5.6	1.8	1.7	0.9	...	0.3	...	...
Total softwoods	2453.1	230.4	360.6	336.7	362.7	368.1	287.0	209.1	140.0	146.9	11.6
Select white oaks	130.4	10.8	15.2	13.3	17.4	17.5	15.2	11.5	9.5	17.0	2.9
Select red oaks	80.9	3.1	1.3	6.7	9.8	8.8	9.1	11.9	5.3	16.6	8.4
Other white oaks	82.2	7.1	8.8	12.1	11.1	12.9	7.6	3.7	3.9	9.8	5.2
Other red oaks	457.1	30.9	54.6	60.7	61.4	64.6	49.9	39.9	31.5	53.1	10.5
Hickory	118.2	7.8	11.7	10.2	19.5	21.1	13.4	14.4	8.1	11.3	0.8
Hard maple	4.3	...	0.6	0.3	1.9	0.4	0.6	...	...	0.4	...
Soft maple	40.2	12.9	11.3	7.3	3.5	1.7	0.9	1.1	0.5	1.1	...
Beech	34.0	1.9	3.2	3.8	2.3	5.9	2.3	3.7	0.9	8.1	1.8
Sweetgum	410.6	60.8	78.3	81.7	48.8	49.0	37.1	17.4	20.8	14.7	1.9
Tupelo-blackgum	133.8	8.4	17.0	24.3	21.1	27.4	13.5	10.3	3.5	6.9	1.2
Ash	58.9	3.6	5.4	10.9	10.0	5.6	9.4	7.3	2.8	3.3	0.5
Cottonwood-aspen	0.5	...	...	...	...	...	...	...	0.5	...	...
Basswood	7.9	...	0.8	0.8	2.8	...	1.4	1.4	0.7	...	...
Yellow-poplar	128.2	4.6	11.9	9.6	19.5	18.4	19.9	9.5	11.4	19.3	4.0
Black walnut	0.8	...	0.3	...	...	0.5	...	...	...	...	...
Other hardwoods	197.7	35.0	28.4	31.4	31.3	19.1	17.3	11.3	10.2	12.4	1.3
Total hardwoods	1885.7	186.9	248.9	273.2	260.5	252.8	197.7	143.5	109.6	174.0	38.5
All species	4338.8	417.3	609.6	609.9	623.2	620.9	484.7	352.6	249.6	321.0	50.1

Table 13 – *Volume of growing stock in the saw-log portion of sawtimber*[1] *trees on timberland by species and diameter class, Southwest-North Alabama Counties, 1990*

		Diameter class (inches at breast height)							
Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet								
Longleaf-slash pines	106.0	20.7	22.3	23.6	14.3	10.2	5.7	9.2	...
Shortleaf-loblolly pines	1377.9	231.8	279.5	289.1	231.2	151.5	100.6	89.7	4.5
Other yellow pines	112.4	11.3	14.6	16.0	12.9	20.8	13.2	23.5	...
Cypress	51.1	1.0	2.8	4.7	3.0	10.5	8.5	14.0	6.6
Other softwoods	8.5	4.4	1.6	1.5	0.8	...	0.2	...	...
Total softwoods	1655.8	269.1	320.7	334.8	262.3	193.0	128.3	136.5	11.2
Select white oaks	76.7	...	13.5	15.0	13.0	9.8	8.0	14.9	2.5
Select red oaks	59.2	...	7.0	7.4	7.7	10.5	4.6	14.3	7.7
Other white oaks	46.0	...	8.5	10.8	6.7	3.4	3.6	8.5	4.7
Other red oaks	261.1	...	46.5	53.8	42.8	34.0	27.4	47.1	9.5
Hickory	73.6	...	14.7	17.5	11.5	12.7	6.8	9.6	0.8
Hard maple	2.5	...	1.5	0.4	0.4	...	...	0.3	...
Soft maple	6.7	...	2.4	1.4	0.7	1.0	0.4	0.9	...
Beech	22.4	...	1.7	5.3	2.0	3.5	0.8	7.4	1.7
Sweetgum	157.3	...	33.5	41.5	33.3	15.4	18.4	13.4	1.8
Tupelo-blackgum	66.8	...	14.6	21.0	11.5	9.4	3.1	6.3	0.9
Ash	32.1	...	6.8	4.4	8.6	6.2	2.6	3.0	0.5
Cottonwood-aspen	0.4	...	...	...	...	...	0.4	...	...
Basswood	4.9	...	2.2	...	0.9	1.1	0.7	...	...
Yellow-poplar	88.1	...	14.8	16.0	17.5	8.2	10.1	17.6	3.9
Black walnut	0.4	...	...	0.4	...	...	...	...	...
Other hardwoods	84.4	...	23.2	15.4	14.8	9.7	8.9	11.4	1.1
Total hardwoods	982.7	...	190.9	210.2	171.2	124.9	95.7	154.7	35.2
All species	2638.6	269.1	511.6	545.1	433.4	317.9	224.0	291.1	46.3

[1] That part of the bole of sawtimber trees between a 1-foot stump and saw-log top.

Table 14 – *Volume of sawtimber on timberland by species and diameter class, Southwest-North Alabama Counties, 1990*

		Diameter class (inches at breast height)							
Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Longleaf-slash pines	657.2	115.9	141.1	149.0	95.0	65.3	34.5	56.4	...
Shortleaf-loblolly pines	8773.0	1266.8	1704.7	1890.0	1543.5	1027.7	696.6	615.6	28.1
Other yellow pines	713.4	62.3	85.5	99.4	82.2	136.2	85.7	162.2	...
Cypress	288.6	4.5	15.6	24.9	16.0	59.8	48.1	84.3	35.3
Other softwoods	42.3	21.4	7.8	7.7	4.2	...	1.1	...	...
Total softwoods	10474.4	1470.9	1954.7	2171.0	1740.9	1289.0	866.0	918.5	63.5
Select white oaks	475.4	...	75.1	87.9	81.0	62.8	52.0	98.2	18.3
Select red oaks	362.2	...	38.0	45.2	46.3	65.1	30.6	88.3	48.7
Other white oaks	265.7	...	45.6	60.7	39.3	18.7	19.8	52.2	29.4
Other red oaks	1548.7	...	258.4	312.1	255.5	207.5	171.6	284.6	59.1
Hickory	449.2	...	84.7	105.3	71.5	80.1	43.8	60.4	3.4
Hard maple	15.1	...	8.6	2.9	2.4	...	...	1.2	...
Soft maple	36.5	...	13.6	7.7	3.5	5.4	2.1	4.1	...
Beech	138.6	...	9.5	32.6	12.9	23.6	6.0	43.9	10.1
Sweetgum	950.0	...	190.7	251.7	206.4	93.3	115.8	82.0	10.0
Tupelo-blackgum	351.4	...	76.6	111.2	59.4	50.4	15.9	32.8	5.0
Ash	178.6	...	37.3	25.1	48.5	37.1	14.4	13.8	2.4
Cottonwood-aspen	2.6	...	...	...	...	...	2.6	...	...
Basswood	31.5	...	13.0	...	5.8	7.7	5.0	...	...
Yellow-poplar	538.4	...	87.9	97.5	107.4	50.8	65.2	110.9	18.7
Black walnut	2.3	...	...	2.3	...	...	...	...	...
Other hardwoods	495.4	...	130.1	90.0	86.3	58.8	56.0	68.5	5.7
Total hardwoods	5841.7	...	1069.3	1232.2	1026.2	761.4	600.9	940.9	210.8
All species	16316.1	1470.9	3023.9	3403.2	2767.1	2050.4	1466.9	1859.3	274.3

Table 15 – *Volume of growing stock and sawtimber on timberland by county and species group, Southwest-North Alabama Counties, 1990*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Choctaw	697.2	99.6	308.1	11.5	147.9	130.2	2659.0	240.7	1518.5	52.4	370.1	477.3
Clarke	1062.3	88.0	496.2	33.3	235.9	208.9	4137.0	181.4	2447.6	168.9	649.2	689.8
Conecuh	466.4	91.3	171.8	1.1	98.6	103.7	1567.0	118.2	827.3	4.6	293.0	323.8
Marengo	420.0	54.8	152.5	9.3	92.1	111.2	1427.0	129.6	609.7	32.2	270.5	385.0
Monroe	657.1	131.4	233.5	9.9	131.6	150.8	2549.3	417.6	1128.5	49.4	401.0	552.8
Sumter	493.2	43.8	180.1	8.7	108.6	151.9	1968.1	170.7	932.8	17.4	275.6	571.6
Wilcox	542.6	102.0	224.1	2.2	81.7	132.7	2008.9	315.6	1105.4	5.9	137.5	444.5
All counties	4338.8	611.0	1766.2	75.9	896.3	989.4	16316.1	1573.7	8569.9	330.8	2396.9	3444.8

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 16 – *Volume of timber on timberland by class of timber and species group, Southwest- North Alabama Counties, 1990*

		Softwood			Hardwood	
		Pine				
Class of timber	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet					
Sawtimber trees:						
Saw-log portion	2638.6	266.5	1329.8	59.6	407.2	575.6
Upper-stem portion	400.2	45.3	154.2	6.7	85.5	108.4
Total	3038.8	311.8	1484.1	66.2	492.7	684.0
Poletimber trees	1300.0	299.2	282.2	9.7	403.6	305.4
All growing-stock trees	4338.8	611.0	1766.2	75.9	896.3	989.4
Rough trees:						
Sawtimber size	97.1	4.5	20.4	3.2	21.8	47.2
Poletimber size	116.6	4.9	5.0	0.6	29.5	76.7
Total	213.7	9.4	25.4	3.8	51.3	123.9
Rotten trees:						
Sawtimber size	48.7	...	1.3	...	18.0	29.4
Poletimber size	6.3	...	...	0.3	4.2	1.8
Total	55.1	...	1.3	0.3	22.2	31.2
Salvable dead trees:						
Sawtimber size	4.3	0.4	3.5	...	...	0.4
Poletimber size	4.9	0.8	3.0	0.2	...	0.8
Total	9.2	1.3	6.5	0.2	...	1.2
All classes	4616.8	621.6	1799.5	80.2	969.8	1145.7

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 17 – *Volume of live trees and growing stock on timberland by ownership class and species group, Southwest-North Alabama Counties, 1990*

	Live trees						Growing stock					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet											
Other public	115.8	5.3	46.1	...	16.4	48.0	109.3	5.3	45.4	...	14.3	44.4
Forest industry	1558.4	284.1	665.9	14.8	270.8	322.8	1480.5	279.7	660.3	14.0	250.0	276.5
Forest industry-leased	259.6	44.8	91.1	2.7	58.2	62.7	243.2	44.8	91.1	2.7	54.4	50.1
Other private	2673.8	286.1	989.8	62.5	624.4	710.9	2505.8	281.1	969.4	59.3	577.6	618.5
All ownerships	4607.6	620.4	1793.0	80.0	969.8	1144.5	4338.8	611.0	1766.2	75.9	896.3	989.4

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 18 – *Average net annual growth of growing stock and sawtimber on timberland by county and species group, Southwest-North Alabama Counties, 1990*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Choctaw	39.1	11.4	14.5	0.2	6.6	6.4	142.9	20.1	79.5	0.9	16.4	25.9
Clarke	49.4	8.1	20.0	0.5	11.2	9.6	211.6	22.0	108.3	3.6	37.7	40.0
Conecuh	25.9	6.3	11.9	...	3.0	4.8	84.0	6.0	57.6	...	5.9	14.4
Marengo	26.4	4.9	11.4	0.5	4.0	5.7	124.2	18.7	64.5	1.5	17.1	22.4
Monroe	38.7	10.6	12.6	0.6	5.9	9.0	156.1	29.5	70.0	2.8	21.6	32.2
Sumter	24.4	2.0	9.2	0.5	3.6	9.1	107.3	0.9	58.4	1.1	10.0	36.9
Wilcox	35.4	7.8	15.6	...	5.6	6.5	141.6	21.4	85.1	0.4	13.3	21.4
All counties	239.4	51.0	95.2	2.3	39.9	51.0	967.6	118.6	523.4	10.3	121.9	193.4

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 19 – *Average annual removals of growing stock and sawtimber on timberland by county and species group, Southwest-North Alabama Counties, 1990*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Choctaw	30.8	0.5	19.3	...	5.5	5.6	118.7	0.8	88.1	...	12.6	17.1
Clarke	36.1	1.3	19.8	0.1	6.5	8.4	150.7	4.5	93.8	0.6	22.4	29.4
Conecuh	14.9	...	5.3	...	5.1	4.6	47.3	...	26.4	...	6.4	14.5
Marengo	33.1	1.2	21.5	0.3	3.1	7.0	137.1	6.4	95.1	1.7	7.5	26.4
Monroe	31.7	5.1	13.9	...	4.1	8.5	110.0	6.9	64.9	...	10.9	27.2
Sumter	23.6	2.2	13.0	...	3.6	4.9	95.8	9.4	63.0	...	8.8	14.5
Wilcox	38.4	1.7	20.8	...	6.4	9.5	163.6	9.5	96.3	...	20.9	36.9
All counties	208.7	11.9	113.5	0.5	34.3	48.4	823.2	37.6	527.6	2.3	89.6	166.1

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 20—*Average net annual growth and average annual removals of growing stock on timberland by species, Southwest-North Alabama Counties, 1990*

Species	Growth	Removals
	Million cubic feet	
Yellow pines	146.3	125.4
Other softwoods	2.3	0.5
Total softwoods	148.5	125.9
Select white-red oaks	8.3	7.4
Other white-red oaks	33.5	30.3
Hickory	4.2	4.5
Hard maple	0.2	0.4
Sweetgum	17.0	18.1
Ash-walnut-black cherry	2.2	2.5
Yellow-poplar	5.8	4.0
Other hardwoods	19.6	15.6
Total hardwoods	90.8	82.7
All species	239.4	208.7

Table 21—*Average net annual growth and average annual removals of sawtimber on timberland by species, Southwest-North Alabama Counties, 1990*

Species	Growth	Removals
	Million board feet	
Yellow pines	642.0	565.2
Other softwoods	10.3	2.3
Total softwoods	652.2	567.5
Select white-red oaks	35.8	26.4
Other white-red oaks	122.0	103.3
Hickory	19.9	14.4
Hard maple	0.6	1.8
Sweetgum	45.1	39.3
Ash-walnut-black cherry	7.7	9.9
Yellow-poplar	24.1	16.3
Other hardwoods	60.2	44.2
Total hardwoods	315.4	255.7
All species	967.6	823.2

Table 22—*Average annual mortality of growing stock and sawtimber on timberland by species, Southwest-North Alabama Counties, 1990*

Species	Growing stock	Sawtimber
	Million cubic feet	*Million board feet*
Yellow pines	14.3	36.4
Other softwoods	0.2	0.2
Total softwoods	14.5	36.6
Select white-red oaks	0.7	3.6
Other white-red oaks	2.7	5.0
Hickory	0.9	2.6
Hard maple	0.1	...
Sweetgum	3.1	5.9
Ash-walnut-black cherry	1.5	2.9
Yellow-poplar	0.5	3.1
Other hardwoods	4.1	7.5
Total hardwoods	13.6	30.7
All species	28.1	67.3

Table 23 – *Average net annual growth and average annual removals of growing stock on timberland by ownership class and species group, Southwest-North Alabama Counties, 1990*

	Growth						Removals					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet											
Other public	3.8	1.1	...	...	0.5	2.1	1.4	...	1.3	...	0.1	...
Forest industry	82.4	26.9	30.1	...	11.4	14.1	71.5	7.2	38.5	...	11.7	14.1
Forest industry-leased	16.8	5.3	5.5	0.1	2.4	3.6	10.2	1.0	5.1	...	0.1	4.0
Other private	136.4	17.8	59.6	2.2	25.6	31.2	125.6	3.7	68.6	0.5	22.4	30.4
All ownerships	239.4	51.0	95.2	2.3	39.9	51.0	208.7	11.9	113.5	0.5	34.3	48.4

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 24 – *Average net annual growth and average annual removals of sawtimber on timberland by ownership class and species group, Southwest-North Alabama Counties, 1990*

	Growth						Removals					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million board feet											
Other public	16.6	0.3	4.8	...	2.6	9.0	7.8	...	7.6	...	0.3	...
Forest industry	319.6	53.3	174.0	0.1	39.4	52.8	277.4	25.3	172.4	...	32.8	46.9
Forest industry-leased	67.0	12.2	31.4	0.3	9.4	13.6	44.0	...	25.2	...	0.5	18.3
Other private	564.4	52.7	313.2	9.9	70.6	118.0	493.9	12.3	322.5	2.3	56.0	100.8
All ownerships	967.6	118.6	523.4	10.3	121.9	193.4	823.2	37.6	527.6	2.3	89.6	166.1

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.
[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 25 – *Volume of sawtimber on timberland by species and tree grade, Southwest-North Alabama Counties, 1990*

Species	All grades	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
	Million board feet					
Yellow pines	10143.6	2548.5	2261.5	5082.9	...	250.7
Cypress	288.6	135.4	62.4	76.2	...	14.5
Redcedar	42.3	42.3	...	...	...	...
Total softwoods	10474.4	2726.2	2323.9	5159.1	...	265.2
Select white-red oaks	837.5	148.1	209.1	270.0	156.1	54.3
Other white-red oaks	1814.4	89.4	271.4	519.9	785.7	148.0
Hickory	449.2	45.2	79.8	163.5	119.2	41.6
Hard maple	15.1	...	...	6.8	7.1	1.2
Sweetgum	950.0	87.3	310.8	306.7	168.6	76.5
Tupelo and blackgum	351.4	41.6	135.5	142.8	11.8	19.8
Ash-walnut-black cherry	185.6	16.7	36.1	87.2	11.2	34.4
Yellow-poplar	538.4	88.6	89.9	158.5	155.1	46.4
Other hardwoods	699.9	42.5	84.9	261.6	233.7	77.1
Total hardwoods	5841.7	559.5	1217.7	1916.9	1648.4	499.3
All species	16316.1	3285.6	3541.5	7076.0	1648.4	764.5

Supplemental Tables 26-43

Table 26—*Area of timberland by stand age, forest type group and stand origin, Southwest-North Alabama Counties, 1990*

Stand age class	Pine		Oak-pine		Other hardwood types	
	Artificial	Natural	Artificial	Natural	Artificial	Natural
	Thousand acres					
1-10	373.1	41.8	62.4	11.0	11.8	63.5
11-20	210.5	22.5	17.7	6.0	5.4	5.4
21-30	72.8	10.7	11.0	12.2	5.4	5.2
31-40	16.5	5.8	...	...	...	...
41-50	...	22.1	...	5.2	...	...
>50	6.3	17.2	5.8	...	...	...
Mixed	63.2	620.8	27.9	483.4	17.5	1223.3
Total	742.3	740.8	124.8	517.8	40.2	1297.5

Table 27—*Volume of softwood growing stock on timberland by county and forest type group, Southwest-North Alabama Counties, 1990*

County	Total	Forest type group						
		Longleaf-slash pine		Loblolly-shortleaf pine		Oak-pine	Oak-hickory	Oak-gum-cypress
		Planted	Natural	Planted	Natural			
	Million cubic feet							
Choctaw	419.2	...	...	94.7	194.5	78.4	27.1	24.5
Clarke	617.5	11.8	8.1	71.3	315.3	149.9	28.7	32.4
Conecuh	264.1	17.1	30.9	70.2	70.0	40.7	26.7	8.6
Marengo	216.6	...	...	54.8	89.2	46.9	20.4	5.3
Monroe	374.7	35.9	16.6	83.6	112.9	77.8	35.8	12.1
Sumter	232.7	...	...	41.5	131.7	42.0	15.5	1.9
Wilcox	328.2	...	4.8	89.5	130.2	70.3	23.5	9.9
All counties	2453.1	64.8	60.4	505.6	1043.8	506.0	177.7	94.7

Table 28—*Volume of hardwood growing stock on timberland by county and forest type group, Southwest-North Alabama Counties, 1990*

County	Total	Forest type group							
		Longleaf-slash pine		Loblolly-shortleaf pine		Oak-pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood
		Planted	Natural	Planted	Natural				
	Million cubic feet								
Choctaw	278.1	...	...	8.9	37.4	47.2	80.5	104.1	...
Clarke	444.8	0.2	0.9	4.8	60.2	93.9	68.5	216.2	...
Conecuh	202.3	...	9.3	9.1	14.7	21.4	71.6	76.2	...
Marengo	203.4	...	...	7.4	12.4	20.8	73.5	89.2	...
Monroe	282.3	0.2	2.7	9.6	16.7	54.8	107.7	90.7	...
Sumter	260.5	...	...	13.0	24.5	35.0	83.5	97.0	7.5
Wilcox	214.4	...	0.5	10.5	26.7	41.9	65.3	69.4	...
All counties	1885.7	0.4	13.3	63.3	192.7	315.1	550.5	742.9	7.5

Table 29 – *Volume of softwood growing stock in the saw-log portion of sawtimber trees on timberland by forest type group, Southwest-North Alabama Counties, 1990*

		Forest type group						
		Longleaf-slash pine		Loblolly-shortleaf pine				
County	Total	Planted	Natural	Planted	Natural	Oak-pine	Oak-hickory	Oak-gum-cypress
	Million cubic feet							
Choctaw	279.2	...	...	36.6	134.6	63.2	22.9	21.9
Clarke	439.5	2.0	5.5	28.9	236.7	116.0	20.9	29.5
Conecuh	150.5	1.0	19.7	20.6	52.0	27.8	22.0	7.3
Marengo	130.4	...	...	27.0	54.0	32.7	12.2	4.4
Monroe	255.6	12.9	11.7	52.0	81.1	59.2	28.5	10.3
Sumter	170.1	...	...	25.0	99.0	31.7	12.7	1.6
Wilcox	230.6	...	1.2	44.6	104.4	51.0	20.3	9.2
All counties	1655.8	15.9	38.1	234.7	761.9	381.5	139.5	84.2

Table 30 – *Volume of hardwood growing stock in the saw-log portion of sawtimber trees on timberland by forest type group, Southwest-North Alabama Counties, 1990*

		Forest type group							
		Longleaf-slash pine		Loblolly-shortleaf pine					
County	Total	Planted	Natural	Planted	Natural	Oak-pine	Oak-hickory	Oak-gum-cypress	Elm-ash-cottonwood
	Million cubic feet								
Choctaw	137.1	...	...	2.3	13.3	23.3	48.2	50.0	...
Clarke	233.2	...	0.3	1.6	23.0	40.7	28.5	139.1	...
Conecuh	105.4	...	5.8	2.3	10.2	6.5	39.4	41.2	...
Marengo	110.1	...	...	2.3	5.0	9.3	34.7	58.8	...
Monroe	159.6	...	0.9	4.6	6.6	28.9	62.1	56.5	...
Sumter	139.6	...	...	6.0	7.9	19.1	47.6	52.8	6.2
Wilcox	97.8	...	...	3.2	10.4	12.8	33.9	37.5	...
All counties	982.7	...	7.0	22.3	76.4	140.5	294.5	435.9	6.2

Table 31 – *Volume of timber on timberland by county, class of timber and species group, Southwest-North Alabama Counties, 1990*

		Growing stock		Rough		Rotten	
County	All classes	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
	Million cubic feet						
Choctaw	753.7	419.2	278.1	13.6	32.4	0.3	10.1
Clarke	1119.9	617.5	444.8	7.0	43.9	...	6.7
Conecuh	494.4	264.1	202.3	3.1	18.7	0.6	5.6
Marengo	446.7	216.6	203.4	4.0	17.5	0.7	4.6
Monroe	701.4	374.7	282.3	1.4	29.4	...	13.5
Sumter	525.5	232.7	260.5	7.2	20.2	...	4.9
Wilcox	566.1	328.2	214.4	2.4	13.1	...	8.0
All counties	4607.6	2453.1	1885.7	38.6	175.2	1.6	53.4

Table 32—*Number of live trees on timberland by detailed species and diameter class, Southwest-North Alabama Counties, 1990*

Species	All classes	Diameter class (inches at breast height) 1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Longleaf pine	12137	2488	3351	2367	1050	1228	762	565	201	107	10	8	...
Slash pine	34934	4807	12715	10725	5159	613	288	273	126	90	68	72	...
Shortleaf pine	39131	6604	6255	7648	6089	4148	4055	2933	770	417	179	33	...
Loblolly pine	492862	203924	126502	72611	44688	18430	10711	6633	4815	2380	1219	932	18
Virginia pine	593	499	...	...	51	44	...	...	...	...	...	...	...
Spruce pine	12645	4113	2528	1151	1407	990	821	519	327	366	184	239	...
Other s. pines	18	...	...	...	...	...	...	...	18	...	...	...	...
Redcedar	26400	15336	6651	2224	1107	726	148	117	65	...	21	5	...
Cypress	2822	977	499	...	187	147	176	200	90	222	134	165	25
Total softwoods	621541	238747	158501	96725	59737	26325	16961	11240	6411	3581	1815	1455	43
Select white oaks	39799	24655	3697	4868	2578	1265	1033	624	407	263	165	213	30
Select red oaks	9631	4508	1054	1545	225	601	543	284	233	296	69	209	64
Other white oaks	34857	17452	7939	3856	2072	1328	975	579	254	125	90	138	49
Other red oaks	374628	280250	53163	14707	10126	5777	3926	2636	1490	1001	616	813	122
Sweet pecan	590	...	553	...	...	37	...	...	...	...	...	...	...
Water hickory	2063	998	499	392	57	...	22	58	14	...	9	15	...
Other hickories	63596	50066	4660	3175	1949	990	1068	752	373	274	139	134	16
Persimmon	19366	16440	1633	1027	205	37	24	...	...	...	...	...	...
Hard maple	8156	5252	2602	...	71	46	118	43	14	...	...	9	...
Soft maple	138543	106285	22771	5319	2558	956	341	172	46	36	10	43	4
Boxelder	1863	1677	...	...	114	41	31	...	...	...	...	...	...
Beech	15840	11992	1029	912	529	337	130	287	61	238	71	216	40
Sweetgum	473563	342094	77204	28472	13388	6435	2493	1632	930	368	346	188	12
Blackgum	84809	66002	8463	4618	2339	1659	870	462	216	116	21	37	4
Other gums/tupelos	4272	...	...	828	697	764	622	757	302	168	58	68	8
White ash	13638	10812	2053	144	123	209	132	45	67	40	...	8	5
Other ashes	18921	8431	5772	1735	877	779	571	179	301	142	61	67	6
Sycamore	1914	...	998	185	137	118	109	58	125	38	39	96	11
Cottonwood	583	559	...	...	...	...	...	...	14	...	10	...	...
Basswood	6393	5514	479	...	110	64	138	21	34	24	9	...	...
Yellow-poplar	42696	28952	6663	1876	1815	775	875	580	498	240	164	221	37
Magnolia	27417	20401	4878	1341	358	181	102	44	32	12	43	20	4
Sweetbay	57779	46655	6758	1545	998	743	480	320	135	46	51	48	...
Willow	3784	2709	575	291	66	78	24	...	33	...	...	8	...
Black walnut	608	...	526	...	63	...	...	20	...	...	...	...	...
Black cherry	32625	22844	8441	761	438	72	59	...	...	...	9	...	...
American elm	8411	6429	575	569	189	165	195	105	51	76	52	...	5
Other elms	40421	30577	5165	2283	1547	338	329	95	29	34	9	14	...
River birch	1915	499	1085	113	...	90	...	44	32	23	30	...	...
Hackberry	8058	2959	575	1570	736	1130	445	283	190	99	39	32	...
Black locust	526	526	...	...	...	...	...	...	...	...	...	...	...
Other locusts	60	...	...	...	60	...	...	...	...	...	...	...	...
Sassafras	10816	10048	...	710	58	...	...	...	...	...	...	...	...
Dogwood	170626	132244	30111	7026	1103	141	...	...	...	...	...	...	...
Holly	60243	50338	6782	2301	574	159	28	48	...	14	...	...	...
Other commercial	9374	4183	3100	1143	697	165	34	40	...	12	...	...	...
Total hardwoods	1788382	1312351	269802	93310	46860	25483	15717	10169	5880	3684	2110	2598	418
Noncommercial	261343	213021	33957	8046	4122	1438	532	155	63	...	10	...	...
All species	2671267	1764119	462260	198082	110718	53246	33210	21563	12355	7265	3934	4053	461

Table 33 – *Number of growing-stock trees on timberland by detailed species and diameter class, Southwest-North Alabama Counties, 1990*

		Diameter class (inches at breast height)									
Species	All classes	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees										
Longleaf pine	6175	2273	1050	1228	732	565	201	107	10	8	...
Slash pine	17275	10588	5159	613	288	273	126	90	68	72	...
Shortleaf pine	25681	7264	5974	4148	3975	2933	770	405	179	33	...
Loblolly pine	157611	70156	43842	17691	10350	6451	4681	2316	1208	896	18
Virginia pine	94	...	51	44	...	...	...	...	...	...	...
Spruce pine	5925	1151	1407	947	786	519	327	366	184	239	...
Other s. pines	18	...	...	...	...	...	18	...	...	...	...
Redcedar	3759	1767	1107	603	148	92	32	...	10	...	...
Cypress	1192	...	106	107	151	200	90	222	134	157	25
Total softwoods	217730	93198	58695	25380	16431	11033	6244	3506	1794	1405	43
Select white oaks	10566	4280	2514	1231	921	601	393	252	165	189	21
Select red oaks	3796	1418	166	601	513	284	233	258	69	200	53
Other white oaks	7933	3245	1617	1237	731	536	222	96	79	129	39
Other red oaks	35724	11853	9075	5294	3427	2464	1447	864	545	680	76
Sweet pecan	37	...	...	37	...	...	...	...	...	...	...
Water hickory	545	392	57	...	...	58	14	...	9	15	...
Other hickories	8057	2714	1871	910	1005	690	360	274	120	106	8
Persimmon	938	748	129	37	24	...	...	...	...	...	...
Hard maple	277	...	71	46	118	18	14	...	...	9	...
Soft maple	7615	4663	1817	759	173	106	32	36	10	18	...
Boxelder	31	...	...	...	31	...	...	...	...	...	...
Beech	2307	821	529	292	130	220	61	92	30	117	16
Sweetgum	48569	24444	12339	6306	2275	1545	852	330	315	151	12
Blackgum	8027	2900	2093	1540	791	418	134	92	21	32	4
Other gums/tupelos	3217	277	627	664	364	697	286	168	58	68	8
White ash	680	144	123	209	74	45	49	26	...	8	...
Other ashes	3851	1207	775	779	456	179	227	130	52	41	4
Sycamore	902	185	137	118	109	58	125	23	39	96	11
Cottonwood	10	...	...	...	...	...	...	...	10	...	...
Basswood	380	...	110	64	138	...	34	24	9	...	...
Yellow-poplar	6835	1876	1689	741	875	580	498	180	164	202	29
Magnolia	1532	980	205	181	51	44	32	12	20	6	...
Sweetbay	3519	1215	883	662	395	193	105	23	21	22	...
Willow	398	197	66	78	24	...	33	...	...	...	...
Black walnut	83	...	63	...	...	20	...	...	...	...	...
Black cherry	1074	652	327	35	59	...	...	...	...	...	...
American elm	1242	466	189	113	195	105	51	76	42	...	5
Other elms	3918	1838	1336	294	276	95	29	34	9	6	...
River birch	292	113	...	90	...	24	32	12	20	...	...
Hackberry	4163	1570	613	1018	445	237	144	87	28	22	...
Other locusts	60	...	60	...	...	...	...	...	...	...	...
Sassafras	621	563	58	...	...	...	...	...	...	...	...
Dogwood	3331	2927	404	...	...	...	...	...	...	...	...
Holly	2609	1997	461	123	28	...	...	...	...	...	...
Other commercial	1283	612	523	83	34	19	...	12	...	...	...
Total hardwoods	174420	74298	40929	23542	13662	9236	5407	3103	1836	2119	286
All species	392149	167496	99624	48922	30092	20269	11652	6608	3630	3525	329

Table 34 – *Volume of growing stock on timberland by detailed species and diameter class, Southwest-North Alabama Counties, 1990*

Species	All classes	Diameter class (inches at breast height) 5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet										
Longleaf pine	84.6	7.0	7.3	18.2	17.9	18.1	8.8	5.9	0.7	0.7	...
Slash pine	106.0	29.3	28.9	7.5	6.7	8.1	6.5	5.0	5.2	8.6	...
Shortleaf pine	427.7	23.2	56.4	65.6	97.1	106.4	37.8	24.4	13.3	3.4	...
Loblolly pine	1619.4	163.8	251.9	224.8	219.2	210.8	215.0	139.9	96.6	92.9	4.6
Virginia pine	1.0	...	0.2	0.8	...	...	...	...	...	...	...
Spruce pine	138.0	3.3	9.8	13.1	16.7	17.3	14.3	22.5	14.8	26.1	...
Other s. pines	0.4	...	...	...	...	...	0.4	...	...	...	...
Redcedar	19.4	3.7	5.5	5.6	1.8	1.7	0.9	...	0.3	...	...
Cypress	56.5	...	0.5	1.2	3.1	5.8	3.3	11.3	9.1	15.2	7.0
Total softwoods	2453.1	230.4	360.6	336.7	362.7	368.1	287.0	209.1	140.0	146.9	11.6
Select white oaks	130.4	10.8	15.2	13.3	17.4	17.5	15.2	11.5	9.5	17.0	2.9
Select red oaks	80.9	3.1	1.3	6.7	9.8	8.8	9.1	11.9	5.3	16.6	8.4
Other white oaks	82.2	7.1	8.8	12.1	11.1	12.9	7.6	3.7	3.9	9.8	5.2
Other red oaks	457.1	30.9	54.6	60.7	61.4	64.6	49.9	39.9	31.5	53.1	10.5
Sweet pecan	0.4	...	...	0.4	...	...	...	...	...	...	...
Water hickory	6.0	1.0	0.4	...	...	2.0	0.6	...	0.8	1.2	...
Other hickories	111.9	6.8	11.3	9.8	19.5	19.1	12.8	14.4	7.3	10.0	0.8
Persimmon	3.6	1.6	0.8	0.6	0.6	...	...	...	...	...	...
Hard maple	4.3	...	0.6	0.3	1.9	0.4	0.6	...	...	0.4	...
Soft maple	39.9	12.9	11.3	7.3	3.1	1.7	0.9	1.1	0.5	1.1	...
Boxelder	0.4	...	...	...	0.4	...	...	...	...	...	...
Beech	34.0	1.9	3.2	3.8	2.3	5.9	2.3	3.7	0.9	8.1	1.8
Sweetgum	410.6	60.8	78.3	81.7	48.8	49.0	37.1	17.4	20.8	14.7	1.9
Blackgum	75.2	7.7	13.3	17.3	15.1	10.2	4.8	3.8	1.2	1.7	0.2
Other gums/tupelos	58.6	0.7	3.8	7.0	6.1	17.3	8.7	6.5	2.3	5.2	1.0
White ash	10.1	0.3	0.9	2.5	1.8	0.9	1.7	1.4	...	0.6	...
Other ashes	48.8	3.3	4.5	8.4	8.2	4.7	7.6	6.0	2.8	2.7	0.5
Sycamore	25.4	0.9	1.2	1.7	2.8	1.5	4.7	1.2	2.3	8.2	1.0
Cottonwood	0.5	...	...	...	...	...	...	...	0.5	...	...
Basswood	7.9	...	0.8	0.8	2.8	...	1.4	1.4	0.7	...	...
Yellow-poplar	128.2	4.6	11.9	9.6	19.5	18.4	19.9	9.5	11.4	19.3	4.0
Magnolia	10.5	2.3	0.9	2.1	1.0	0.9	1.2	0.2	1.3	0.6	...
Sweetbay	31.5	4.1	4.5	6.6	6.5	4.0	2.8	0.8	0.8	1.4	...
Willow	2.8	0.5	0.4	0.6	0.5	...	0.9	...	...	...	...
Black walnut	0.8	...	0.3	...	...	0.5	...	...	...	...	...
Black cherry	5.1	2.1	1.5	0.4	1.1	...	...	...	...	...	...
American elm	17.9	1.3	1.3	1.4	3.3	2.9	1.4	2.9	3.0	...	0.3
Other elms	27.3	4.8	6.9	3.5	5.8	2.7	0.7	1.9	0.6	0.4	...
River birch	3.3	0.5	...	0.6	...	0.4	0.8	0.3	0.7	...	...
Hackberry	45.9	4.0	3.7	12.1	8.5	6.0	4.8	3.4	1.4	1.9	...
Other locusts	0.5	...	0.5	...	...	...	...	...	...	...	...
Sassafras	1.3	1.1	0.2	...	...	...	...	...	...	...	...
Dogwood	7.3	5.7	1.7	...	...	...	...	...	...	...	...
Holly	8.5	4.6	2.2	1.2	0.5	...	...	...	...	...	...
Other commercial	6.7	1.5	2.8	0.7	0.6	0.5	...	0.5	...	...	...
Total hardwoods	1885.7	186.9	248.9	273.2	260.5	252.8	197.7	143.5	109.6	174.0	38.5
All species	4338.8	417.3	609.6	609.9	623.2	620.9	484.7	352.6	249.6	321.0	50.1

Table 35 – *Volume of growing stock in the saw-log portion of sawtimber trees on timberland by detailed species and diameter class, Southwest-North Alabama Counties, 1990*

		Diameter class (inches at breast height)							
Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet								
Longleaf pine	61.5	14.8	16.0	16.1	8.0	5.3	0.6	0.7	...
Slash pine	44.5	5.9	6.2	7.5	6.3	4.9	5.2	8.6	...
Shortleaf pine	309.4	54.3	86.2	96.8	34.3	22.8	11.7	3.3	...
Loblolly pine	1068.5	177.4	193.3	192.3	196.9	128.7	89.0	86.4	4.5
Virginia pine	0.7	0.7	...	...	...	...	...	...	...
Spruce pine	111.5	10.6	14.6	16.0	12.7	20.8	13.2	23.5	...
Other s. pines	0.3	...	...	...	0.3	...	...	...	...
Redcedar	8.5	4.4	1.6	1.5	0.8	...	0.2	...	...
Cypress	51.1	1.0	2.8	4.7	3.0	10.5	8.5	14.0	6.6
Total softwoods	1655.8	269.1	320.7	334.8	262.3	193.0	128.3	136.5	11.2
Select white oaks	76.7	...	13.5	15.0	13.0	9.8	8.0	14.9	2.5
Select red oaks	59.2	...	7.0	7.4	7.7	10.5	4.6	14.3	7.7
Other white oaks	46.0	...	8.5	10.8	6.7	3.4	3.6	8.5	4.7
Other red oaks	261.1	...	46.5	53.8	42.8	34.0	27.4	47.1	9.5
Water hickory	4.1	...	...	1.6	0.6	...	0.8	1.2	...
Other hickories	69.5	...	14.7	16.0	10.9	12.7	6.0	8.4	0.8
Persimmon	0.5	...	0.5	...	...	...	...	...	...
Hard maple	2.5	...	1.5	0.4	0.4	...	...	0.3	...
Soft maple	6.5	...	2.1	1.4	0.7	1.0	0.4	0.9	...
Boxelder	0.3	...	0.3	...	...	...	...	...	...
Beech	22.4	...	1.7	5.3	2.0	3.5	0.8	7.4	1.7
Sweetgum	157.3	...	33.5	41.5	33.3	15.4	18.4	13.4	1.8
Blackgum	29.2	...	10.9	7.9	4.3	3.6	1.0	1.5	0.1
Other gums/tupelos	37.6	...	3.7	13.1	7.3	5.8	2.1	4.9	0.8
White ash	5.4	...	1.4	0.8	1.6	1.1	...	0.6	...
Other ashes	26.7	...	5.4	3.6	7.0	5.2	2.6	2.4	0.5
Sycamore	18.9	...	1.8	1.3	4.3	1.1	2.1	7.5	0.8
Cottonwood	0.4	...	...	...	...	...	0.4	...	...
Basswood	4.9	...	2.2	...	0.9	1.1	0.7	...	...
Yellow-poplar	88.1	...	14.8	16.0	17.5	8.2	10.1	17.6	3.9
Magnolia	4.4	...	0.6	0.8	1.1	0.2	0.9	0.6	...
Sweetbay	13.4	...	5.1	3.3	2.3	0.6	0.8	1.3	...
Willow	1.2	...	0.4	...	0.8	...	...	...	...
Black walnut	0.4	...	...	0.4	...	...	...	...	...
Black cherry	0.8	...	0.8	...	...	...	...	...	...
American elm	10.8	...	2.2	2.3	1.1	2.4	2.5	...	0.3
Other elms	10.0	...	4.7	2.3	0.6	1.6	0.6	0.3	...
River birch	1.9	...	...	0.3	0.6	0.3	0.7	...	...
Hackberry	20.7	...	6.3	4.6	3.9	3.1	1.3	1.6	...
Holly	0.4	...	0.4	...	...	...	...	...	...
Other commercial	1.4	...	0.4	0.5	...	0.5	...	...	...
Total hardwoods	982.7	...	190.9	210.2	171.2	124.9	95.7	154.7	35.2
All species	2638.6	269.1	511.6	545.1	433.4	317.9	224.0	291.1	46.3

Table 36 – *Volume of timber on timberland by detailed species and class of timber, Southwest-North Alabama Counties, 1990*

Species	All live	Growing stock	Rough	Rotten
	Million cubic feet			
Longleaf pine	85.0	84.6	0.5	...
Slash pine	106.3	106.0	0.3	...
Shortleaf pine	431.9	427.7	4.2	...
Loblolly pine	1650.1	1619.4	29.3	1.3
Virginia pine	1.0	1.0	...	...
Spruce pine	138.6	138.0	0.6	...
Other s. pines	0.4	0.4	...	...
Redcedar	21.9	19.4	2.3	0.1
Cypress	58.1	56.5	1.4	0.2
Total softwoods	2493.3	2453.1	38.6	1.6
Select white oaks	135.8	130.4	3.6	1.8
Select red oaks	84.1	80.9	1.0	2.2
Other white oaks	91.3	82.2	7.9	1.2
Other red oaks	494.3	457.1	27.4	9.9
Sweet pecan	0.4	0.4	...	...
Water hickory	6.4	6.0	0.4	...
Other hickories	118.7	111.9	4.4	2.4
Persimmon	4.2	3.6	0.5	...
Hard maple	4.8	4.3	0.5	...
Soft maple	49.5	39.9	7.1	2.5
Boxelder	1.3	0.4	0.5	0.4
Beech	48.3	34.0	4.1	10.2
Sweetgum	432.1	410.6	14.1	7.4
Blackgum	82.6	75.2	5.6	1.8
Other gums/tupelos	65.8	58.6	6.9	0.3
White ash	11.6	10.1	1.4	0.1
Other ashes	57.1	48.8	5.2	3.0
Sycamore	25.6	25.4	...	0.2
Cottonwood	0.9	0.5	...	0.3
Basswood	8.4	7.9	0.4	...
Yellow-poplar	134.1	128.2	3.5	2.4
Magnolia	14.4	10.5	1.8	2.0
Sweetbay	37.5	31.5	3.2	2.8
Willow	3.0	2.8	...	0.2
Black walnut	0.8	0.8	...	...
Black cherry	6.1	5.1	0.9	...
American elm	18.6	17.9	0.5	0.2
Other elms	29.9	27.3	2.6	...
River birch	3.9	3.3	0.5	0.2
Hackberry	49.8	45.9	2.6	1.3
Other locusts	0.5	0.5	...	...
Sassafras	1.5	1.3	0.2	...
Dogwood	15.0	7.3	7.5	0.2
Holly	10.3	8.5	1.8	...
Other commercial	8.8	6.7	1.9	0.2
Total hardwoods	2057.2	1885.7	118.1	53.4
Noncommercial	57.0	...	57.0	...
All species	4607.6	4338.8	213.7	55.1

Table 37 – *Volume of sawtimber for tree grade 1 on timberland by detailed species and diameter class, Southwest-North Alabama Counties, 1990*

Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
		Diameter class (inches at breast height)							
	Million board feet								
Longleaf pine	103.5	17.6	42.3	10.7	16.3	13.0	3.7	...	...
Slash pine	96.1	3.4	17.8	13.5	19.3	12.5	8.5	21.1	...
Shortleaf pine	649.9	83.0	159.0	209.7	68.7	77.2	35.5	16.8	...
Loblolly pine	1619.7	70.0	129.8	248.8	317.4	304.5	253.3	282.5	13.5
Spruce pine	79.3	4.8	...	...	5.2	31.3	23.9	14.1	...
Redcedar	42.3	21.4	7.8	7.7	4.2	...	1.1	...	...
Cypress	135.4	...	1.6	5.6	2.0	30.9	32.4	62.7	...
Total softwoods	2726.2	200.3	358.4	495.9	433.1	469.3	358.4	397.2	13.5
Select white oaks	72.5	...	...	...	...	13.8	12.6	35.8	10.3
Select red oaks	75.6	...	...	...	...	13.1	5.6	26.7	30.2
Other white oaks	11.7	...	...	...	3.1	...	...	8.5	...
Other red oaks	77.7	...	...	...	7.3	11.6	18.4	24.0	16.4
Water hickory	8.3	...	...	...	3.4	...	4.9	...	...
Other hickories	36.9	...	...	...	5.9	10.4	13.9	6.7	...
Beech	4.3	...	...	...	4.3	...	...	...	...
Sweetgum	87.3	...	...	...	6.8	17.0	21.6	37.1	4.9
Blackgum	16.0	...	...	...	3.5	4.9	...	7.5	...
Other gums/tupelos	25.7	...	...	...	7.1	2.5	4.9	9.3	1.9
White ash	10.1	...	...	...	2.8	7.2	...	...	...
Other ashes	6.6	...	...	...	3.4	3.2	...	...	...
Sycamore	25.8	...	...	...	6.2	...	3.1	14.6	2.0
Yellow-poplar	88.6	...	...	...	...	31.6	17.0	40.0	...
American elm	8.1	...	...	...	...	2.9	5.2	...	...
Other elms	4.3	...	...	...	...	...	4.3	...	...
Total hardwoods	559.5	...	...	...	53.9	118.2	111.5	210.2	65.6
All species	3285.6	200.3	358.4	495.9	487.0	587.5	469.9	607.4	79.1

Table 38—*Volume of sawtimber for tree grade 2 on timberland by detailed species and diameter class, Southwest-North Alabama Counties, 1990*

Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
		Diameter class (inches at breast height)							
	Million board feet								
Longleaf pine	82.5	9.0	15.3	39.8	9.2	9.2	...	...	...
Slash pine	73.8	8.7	11.9	13.3	10.8	5.0	6.3	17.7	...
Shortleaf pine	494.8	71.2	133.0	176.1	74.9	33.3	6.3	...	...
Loblolly pine	1475.2	92.5	178.2	316.4	406.8	196.6	148.7	130.6	5.4
Spruce pine	135.2	2.9	5.9	24.2	14.9	29.5	25.2	32.7	...
Cypress	62.4	...	7.9	5.2	8.2	14.3	9.8	17.0	...
Total softwoods	2323.9	184.2	352.3	575.0	524.8	287.9	196.3	198.0	5.4
Select white oaks	116.9	...	...	18.7	36.1	11.5	11.9	34.4	4.2
Select red oaks	92.2	...	...	5.1	26.0	18.9	8.0	24.1	10.1
Other white oaks	37.0	...	...	11.6	5.6	5.9	6.3	2.0	5.5
Other red oaks	234.5	...	...	27.8	68.8	30.4	38.8	51.6	17.1
Water hickory	3.9	...	...	3.9	...	...	...	...	...
Other hickories	75.8	...	...	28.0	10.7	23.1	6.7	7.3	...
Sweetgum	310.8	...	...	115.7	102.0	34.2	42.6	16.3	...
Blackgum	43.0	...	...	14.2	18.5	8.0	2.3	...	...
Other gums/tupelos	92.5	...	...	44.1	15.5	20.8	1.8	10.3	...
White ash	2.1	...	...	...	...	...	...	2.1	...
Other ashes	31.7	...	...	2.4	9.3	12.4	3.4	4.3	...
Sycamore	16.6	...	...	4.2	5.3	...	...	7.1	...
Basswood	9.2	...	...	...	3.9	5.2	...	...	...
Yellow-poplar	89.9	...	...	19.2	24.5	2.2	5.7	29.5	8.8
Magnolia	3.3	...	...	...	3.3	...	...	...	...
Sweetbay	13.4	...	...	5.5	7.9	...	...	...	...
Black walnut	2.3	...	...	2.3	...	...	...	...	...
American elm	15.1	...	...	4.3	...	2.8	8.0	...	...
Other elms	6.8	...	...	3.0	...	3.8	...	...	...
River birch	7.4	...	...	1.6	1.7	1.9	2.3	...	...
Hackberry	13.2	...	...	1.3	...	5.3	2.2	4.3	...
Total hardwoods	1217.7	...	...	312.9	339.0	186.4	140.1	193.4	45.7
All species	3541.5	184.2	352.3	887.9	863.8	474.4	336.4	391.4	51.2

Table 39 – *Volume of sawtimber for tree grade 3 on timberland by detailed species and diameter class, Southwest-North Alabama Counties, 1990*

Species	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Longleaf pine	187.3	54.8	41.1	48.1	27.4	11.9	...	4.0	...
Slash pine	82.3	17.1	7.1	15.2	6.4	8.6	14.3	13.6	...
Shortleaf pine	831.9	165.3	245.9	247.5	89.1	43.1	36.2	4.9	...
Loblolly pine	3485.0	771.1	812.9	646.5	530.3	347.2	209.1	158.7	9.2
Virginia pine	4.6	4.6	...	...	...	...	...	...	...
Spruce pine	490.4	50.0	79.6	72.8	60.6	75.4	36.6	115.4	...
Other s. pines	1.4	...	...	...	1.4	...	...	...	...
Cypress	76.2	4.5	4.4	14.0	5.8	11.6	5.9	1.6	28.4
Total softwoods	5159.1	1067.3	1190.9	1044.2	721.1	497.8	302.1	298.2	37.6
Select white oaks	183.5	...	54.2	43.6	27.8	26.9	9.8	18.4	2.8
Select red oaks	86.5	...	24.3	16.6	13.1	6.9	...	21.6	4.1
Other white oaks	122.1	...	28.7	18.5	20.0	6.7	4.6	27.3	16.4
Other red oaks	397.7	...	68.4	69.2	66.0	64.3	46.8	79.1	4.0
Water hickory	5.8	...	...	5.8	...	...	...	...	...
Other hickories	157.7	...	46.7	34.7	28.4	26.7	11.3	9.9	...
Persimmon	3.2	...	3.2	...	...	...	...	...	...
Hard maple	6.8	...	4.3	...	2.4	...	...	...	...
Soft maple	13.4	...	7.5	...	1.7	4.2	...	...	...
Beech	53.7	...	8.1	8.4	...	9.1	3.1	18.3	6.7
Sweetgum	306.7	...	120.8	69.8	42.3	20.1	29.4	24.2	...
Blackgum	87.5	...	54.3	23.3	...	5.6	3.6	...	0.7
Other gums/tupelos	55.3	...	16.7	17.8	8.5	2.9	2.3	4.6	2.5
White ash	13.4	...	5.7	4.4	3.3	...	...	...	...
Other ashes	69.1	...	21.6	16.3	20.2	3.1	6.3	1.6	...
Sycamore	18.1	...	10.3	...	2.5	...	2.8	2.5	...
Cottonwood	2.6	...	...	...	...	...	2.6	...	...
Basswood	14.8	...	7.3	...	...	2.5	5.0	...	...
Yellow-poplar	158.5	...	43.3	23.6	35.8	6.7	27.8	19.2	2.1
Magnolia	12.0	...	3.5	1.9	3.4	...	...	3.2	...
Sweetbay	38.2	...	14.9	8.7	4.0	1.7	4.8	4.2	...
Willow	2.2	...	2.2	...	...	...	...	...	...
Black cherry	4.7	...	4.7	...	...	...	...	...	...
American elm	26.4	...	8.5	9.8	4.3	3.9	...	...	...
Other elms	20.5	...	12.6	3.6	2.3	...	...	2.0	...
Hackberry	50.6	...	20.2	14.0	9.0	4.9	...	2.5	...
Holly	2.3	...	2.3	...	...	...	...	...	...
Other commercial	3.5	...	...	3.5	...	...	...	...	...
Total hardwoods	1916.9	...	594.3	393.6	295.0	196.1	160.1	238.5	39.2
All species	7076.0	1067.3	1785.2	1437.8	1016.1	693.9	462.2	536.7	76.9

Table 40 – *Volume of sawtimber for tree grade 4 on timberland by detailed species and diameter class, Southwest-North Alabama Counties, 1990*

Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
		Diameter class (inches at breast height)							
	Million board feet								
Select white oaks	76.9	...	15.9	21.1	12.0	4.9	13.5	9.6	...
Select red oaks	79.2	...	12.6	20.9	5.3	19.2	11.9	9.3	...
Other white oaks	77.7	...	13.8	24.3	9.1	6.1	5.5	12.5	6.4
Other red oaks	708.0	...	161.8	191.0	89.4	91.6	52.0	102.8	19.4
Water hickory	6.6	...	...	...	...	...	...	6.6	...
Other hickories	112.6	...	31.6	26.6	16.4	14.5	7.0	16.4	...
Hard maple	7.1	...	4.2	2.9	...	...	...	...	...
Soft maple	11.3	...	4.9	2.6	...	...	2.1	1.7	...
Boxelder	1.3	...	1.3	...	...	...	...	...	...
Beech	64.7	...	1.4	21.7	8.5	14.5	...	18.6	...
Sweetgum	168.6	...	60.1	51.9	35.2	15.2	6.2	...	...
Blackgum	8.5	...	2.8	5.1	0.6	...	...	...	...
Other gums/tupelos	3.3	...	...	...	1.2	2.1	...	...	...
White ash	4.0	...	...	...	4.0	...	...	...	...
Other ashes	7.2	...	4.9	...	...	...	2.3	...	...
Sycamore	35.2	...	...	2.3	8.3	1.7	...	23.0	...
Basswood	5.3	...	3.4	...	1.9	...	...	...	...
Yellow-poplar	155.1	...	41.8	48.3	37.3	10.3	8.3	9.2	...
Magnolia	8.1	...	...	2.9	...	1.3	3.9	...	...
Sweetbay	10.1	...	8.1	2.0	...	...	...	...	...
Willow	4.9	...	...	...	4.9	...	...	...	...
American elm	8.8	...	3.9	...	2.1	2.8	...	...	...
Other elms	28.8	...	14.8	7.5	...	6.4	...	...	...
Hackberry	52.9	...	14.3	10.2	13.6	6.1	5.6	3.1	...
Other commercial	2.4	...	2.4	...	...	...	...	...	...
Total hardwoods	1648.4	...	404.0	441.3	249.8	196.5	118.3	212.6	25.8
All species	1648.4	...	404.0	441.3	249.8	196.5	118.3	212.6	25.8

Table 41 – *Volume of sawtimber on timberland by species and ownership class, Southwest-North Alabama Counties, 1990*

Species	All ownerships	National forest	Other public	Forest industry	Forest industry-leased	Other private
	Million board feet					
Yellow pines	10143.6	...	269.9	3836.5	557.2	5480.0
Cypress	288.6	...	...	65.9	9.0	213.7
Redcedar	42.3	...	...	5.8	...	36.5
Total softwoods	10474.4	...	269.9	3908.2	566.2	5730.2
Select white-red oaks	837.5	...	77.4	243.1	33.8	483.2
Other white-red oaks	1814.4	...	96.1	491.5	75.4	1151.4
Hickory	449.2	...	12.6	105.6	42.9	288.1
Hard maple	15.1	...	5.9	...	2.4	6.7
Sweetgum	950.0	...	16.3	228.6	75.0	630.0
Tupelo and blackgum	351.4	...	8.6	136.3	22.0	184.5
Ash-walnut-black cherry	185.6	...	4.8	56.1	6.2	118.5
Yellow-poplar	538.4	...	4.3	115.3	40.9	377.9
Other hardwoods	699.9	...	19.3	216.7	64.2	399.7
Total hardwoods	5841.7	...	245.5	1593.3	362.8	3640.1
All species	16316.1	...	515.3	5501.5	929.0	9370.3

Table 42—*Average net annual growth, average annual removals, and average annual mortality of live trees*[1] *by county and species group, Southwest-North Alabama Counties, 1990*

County	Growth			Removals			Mortality		
	All species	Softwood	Hardwood	All species	Softwood	Hardwood	All species	Softwood	Hardwood
	Million cubic feet								
Choctaw	40.5	26.7	13.8	31.1	19.7	11.4	4.0	2.2	1.8
Clarke	50.8	28.5	22.3	36.6	21.2	15.4	9.0	4.9	4.1
Conecuh	25.0	17.6	7.5	15.5	5.5	10.0	5.3	2.4	3.0
Marengo	26.5	16.8	9.7	33.1	23.0	10.1	5.4	2.5	2.9
Monroe	37.9	22.5	15.4	32.3	19.0	13.3	5.6	2.2	3.5
Sumter	24.4	11.7	12.6	23.6	15.1	8.5	4.4	1.6	2.7
Wilcox	32.7	20.6	12.1	39.9	22.9	17.0	3.9	2.2	1.7
All counties	237.9	144.5	93.4	212.2	126.5	85.7	37.7	18.0	19.7

[1] Excludes trees less than 5.0 inches in diameter at breast height.

Table 43—*Average net annual growth, average annual removals, and average annual mortality of live trees*[1] *by ownership class and species group, Southwest-North Alabama Counties, 1990*

Ownership class	Growth			Removals			Mortality		
	All classes	Softwood	Hardwood	All species	Softwood	Hardwood	All Species	Softwood	Hardwood
	Million cubic feet								
Other public	4.1	1.4	2.8	1.4	1.3	0.1	1.1	0.7	0.4
Forest industry	82.4	56.6	25.8	73.1	45.8	27.3	14.1	7.6	6.6
Forest industry-leased	15.0	9.4	5.7	10.2	6.1	4.1	1.0	0.3	0.7
Other private	136.3	77.1	59.2	127.6	73.3	54.3	21.4	9.4	12.0
All ownerships	237.9	144.5	93.4	212.2	126.5	85.7	37.7	18.0	19.7

[1] Excludes trees less than 5.0 inches in diameter at breast height.

FIGURES

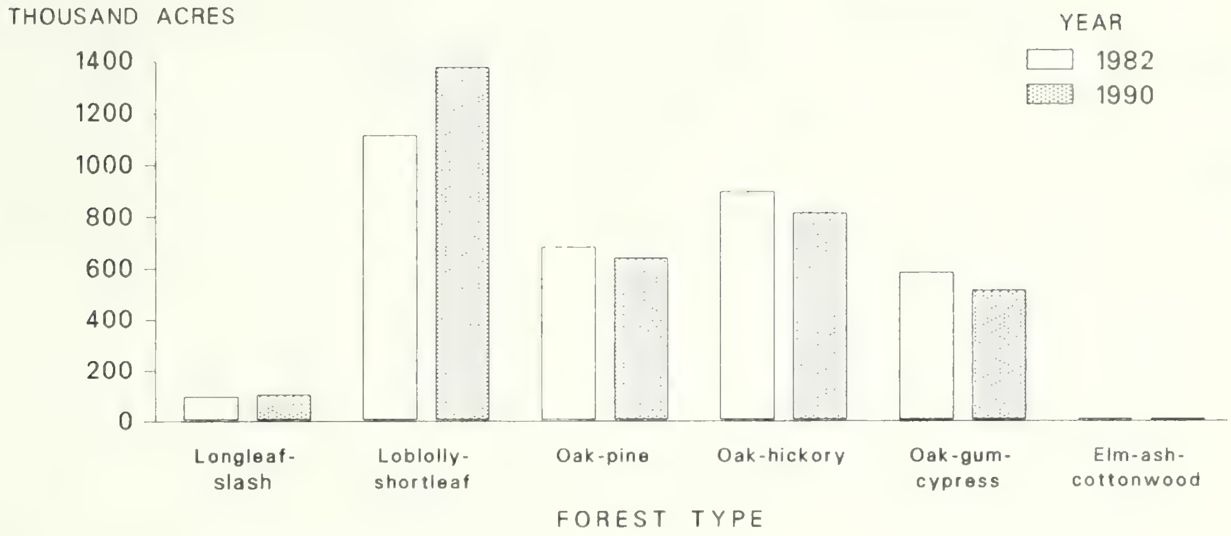

Figure 1.—*Area of timberland by forest type, Southwest-North Alabama, 1982 and 1990.*

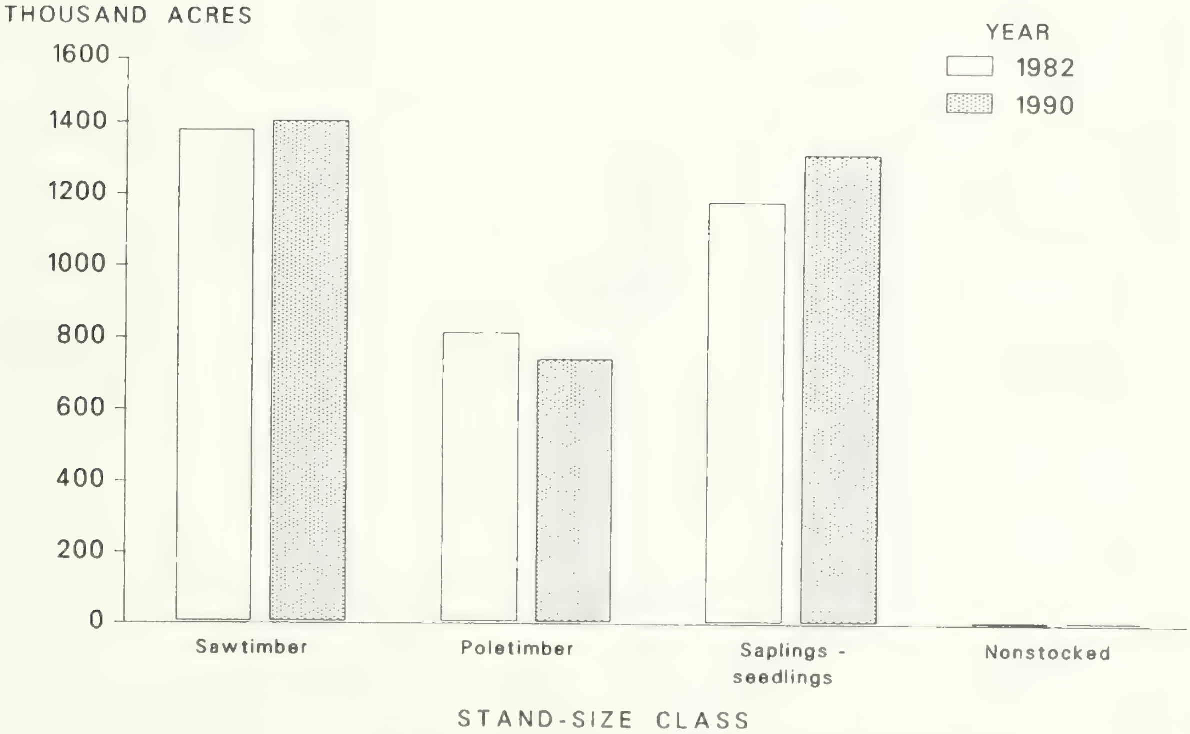

Figure 2.—*Area of timberland by stand-size class, Southwest-North Alabama, 1982 and 1990.*

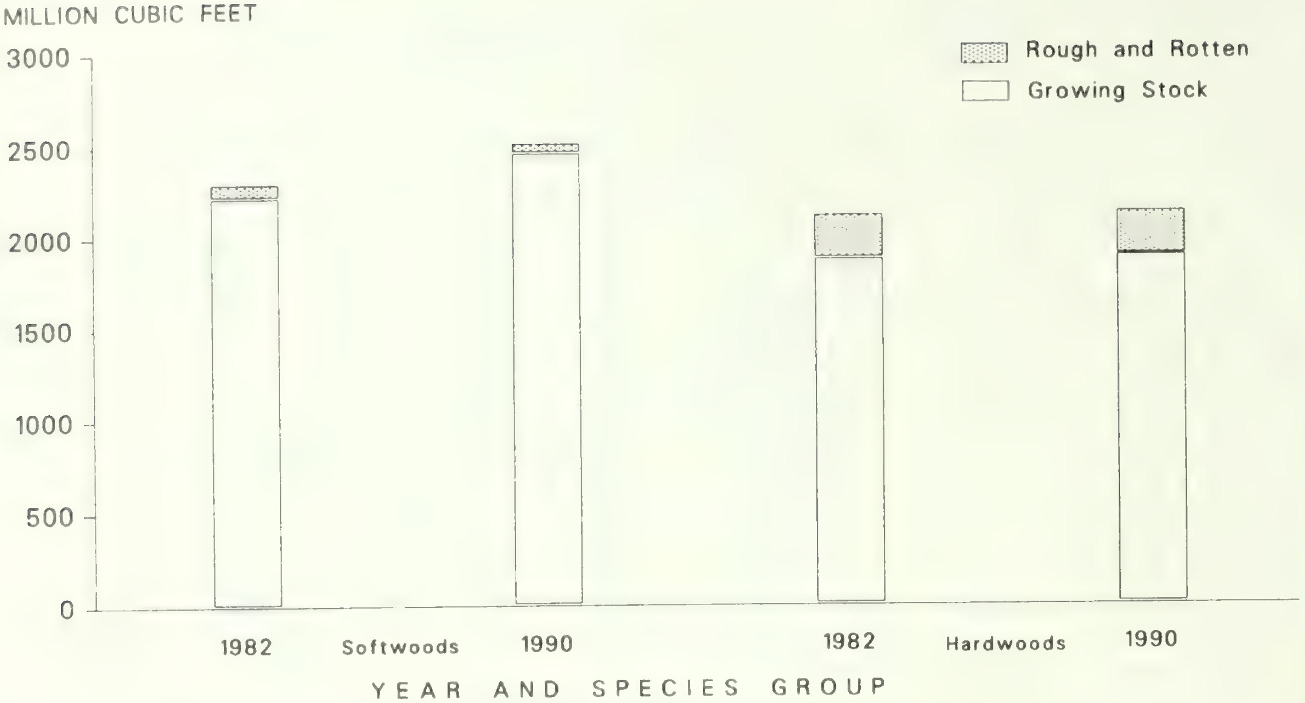

Figure 3.—*Volume of live trees on timberland by species group and class of timber, Southwest-North Alabama, 1982 and 1990.*

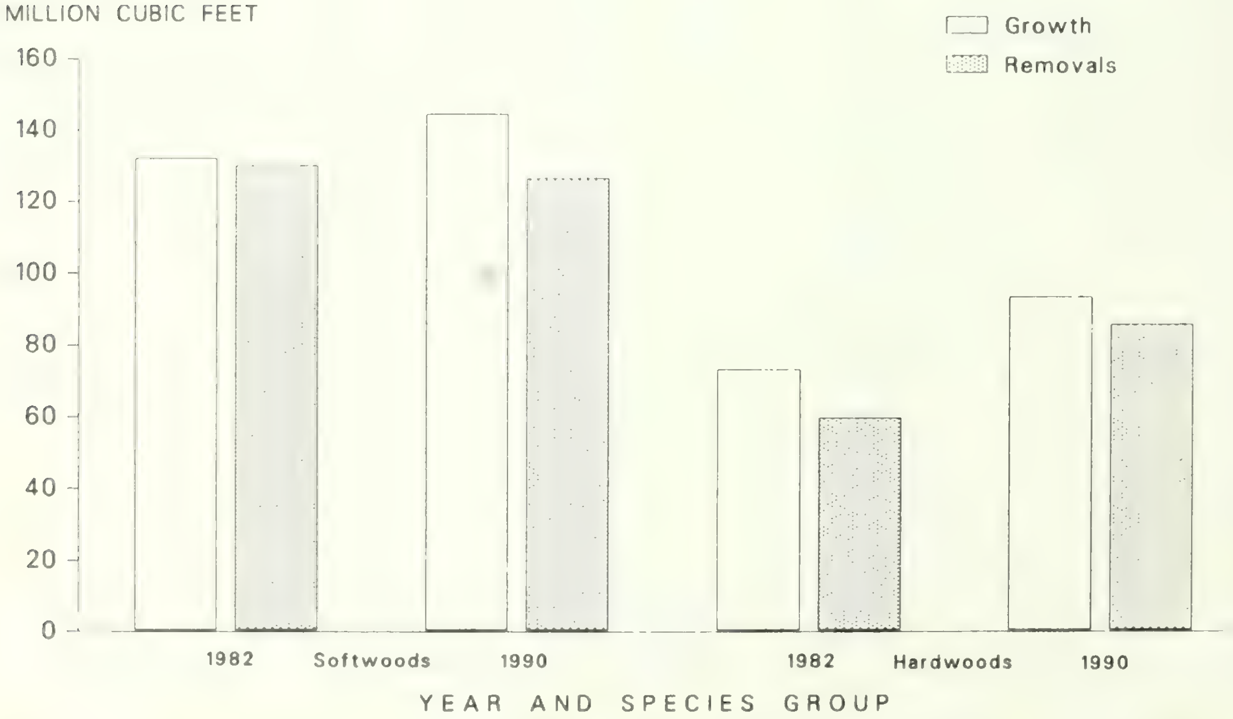

Figure 4.—*Average net annual growth and average annual removals of live trees on timberland by species group, Southwest-North Alabama, 1982 and 1990.*

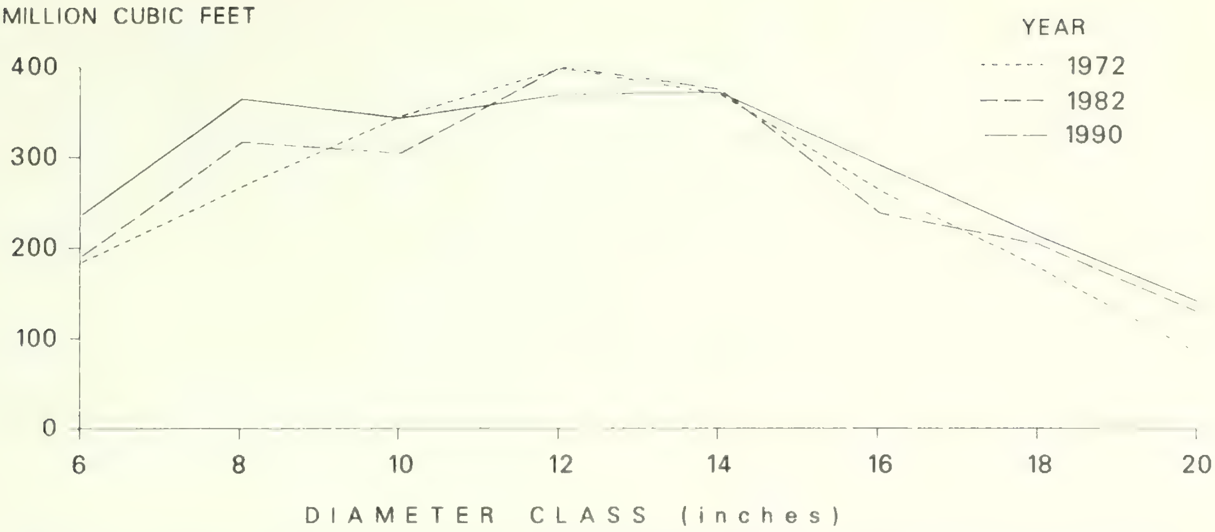

Figure 5.—*Volume of live softwood trees on timberland by diameter class, Southwest-North Alabama, 1972, 1982 and 1990.*

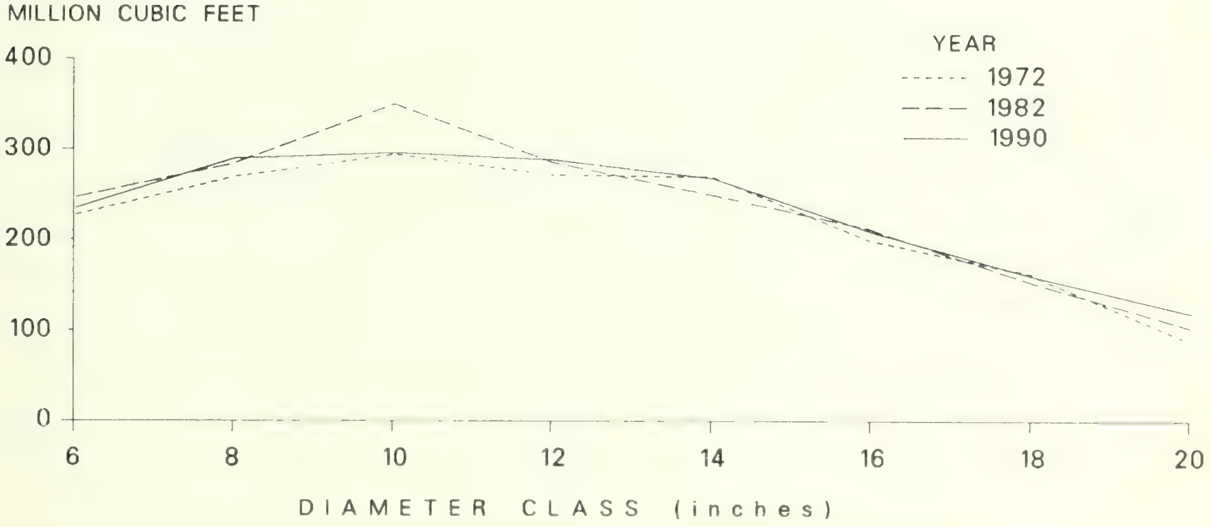

Figure 6.—*Volume of live hardwood trees on timberland by diameter class, Southwest-North Alabama, 1972, 1982 and 1990.*

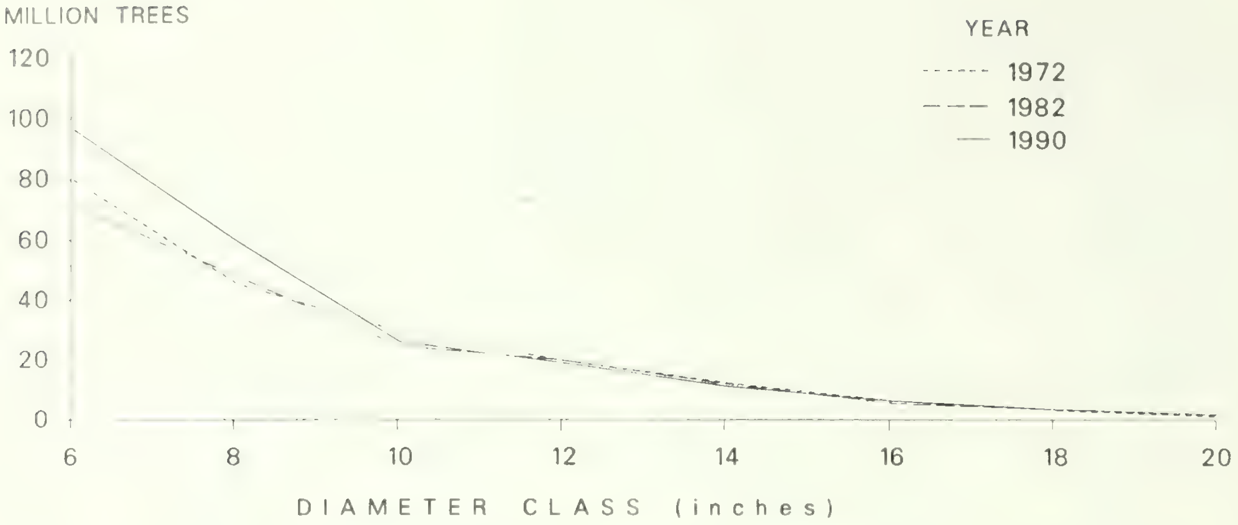

Figure 7.—*Number of live softwood trees on timberland by diameter class, Southwest-North Alabama, 1972, 1982 and 1990.*

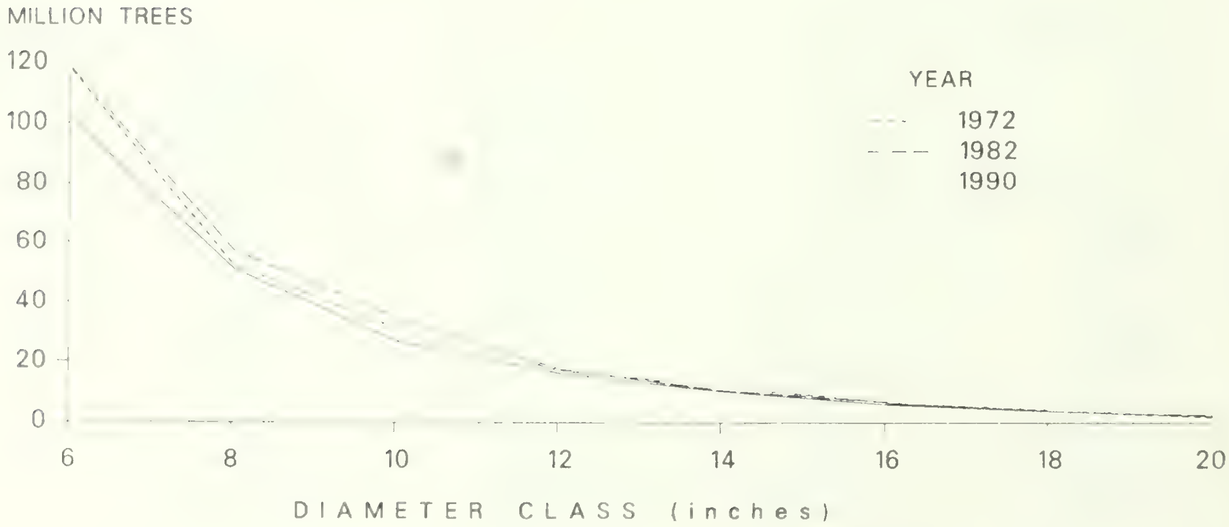

Figure 8.—*Number of live hardwood trees on timberland by diameter class, Southwest-North Alabama, 1972, 1982 and 1990.*

McWilliams, William H.; Miller, Patrick E.; Vissage, John S. 1990. Forest Statistics for Southwest-North Alabama Counties–1990. Resour. Bull. SO-153. New Orleans, LA: U. S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 30p.

Tabulates forest resource information from a new inventory of the Southwest-North Counties of Alabama.

Additional Keywords: Area, volume, forest type, stand size, and ownership.

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Midsouth Veneer Industry

Dennis M. May and John S. Vissage

SUMMARY

The USDA Forest Service, Southern Forest Experiment Station's latest survey of the Midsouth veneer industry shows the softwood veneer industry continuing its dominance as the hardwood veneer industry has continued to decline. The number of softwood mills has stabilized after years of growth, while both commercial and container hardwood mills have decreased in number. Production and consumption of hardwood veneer logs have also decreased in response to the reduction in hardwood mills. Production and consumption of softwood veneer logs have both increased by half since 1972, even though softwood mill numbers have remained constant. Virtually all of the wood residues generated by the Midsouth veneer industry are now utilized, mainly as pulp chips and fuel.

September 1990

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INTRODUCTION

The USDA Forest Service, Southern Forest Experiment Station has periodically surveyed the Midsouth veneer industry to track changes in the industry's size and composition as well as changes in its use of roundwood and in its generation and disposition of wood residues. To continue tracking the changes, a new survey of all veneer mills receiving veneer logs produced in the Midsouth (fig. I) was conducted in 1988. Although intended to be a 100-percent canvass, not all veneer mills in the Midsouth (fig.1) responded to the survey (table 1). As a consequence, veneer-log production and consumption data from previous surveys, mill directories, and other sources were used to estimate State totals for States with nonresponding mills.

THE PAST

The first Midsouth veneer study was conducted in 1963 (Christopher and Sternitzke 1964) and described a shrinking industry dependent on the region's hardwood resources. In 1963, the industry was about equally comprised of container mills, which produced veneers for the manufacture of crates, boxes, and baskets used in the shipping and packing industries, and commercial mills, which produced veneers for the manufacture of doors, furniture, paneling, and plywood (fig. 2). Mills of both types depended almost exclusively on the hardwood resources of the region, preferring high-quality soft hardwoods, especially sweetgum and tupelo gums (fig. 3). Both sectors of the industry had been declining over the years due to

Table 1.—*Number of operating and responding Midsouth veneer mills by State, 1988*

State	Mills operating	Mills responding	Response rate
	Number		*Percent*
Alabama	25	8	32
Arkansas	8	6	75
Louisiana	13	7	54
Mississippi	10	5	50
Oklahoma	1	1	100
Tennessee	3	3	100
Texas	12	12	100
All States	72	42	58

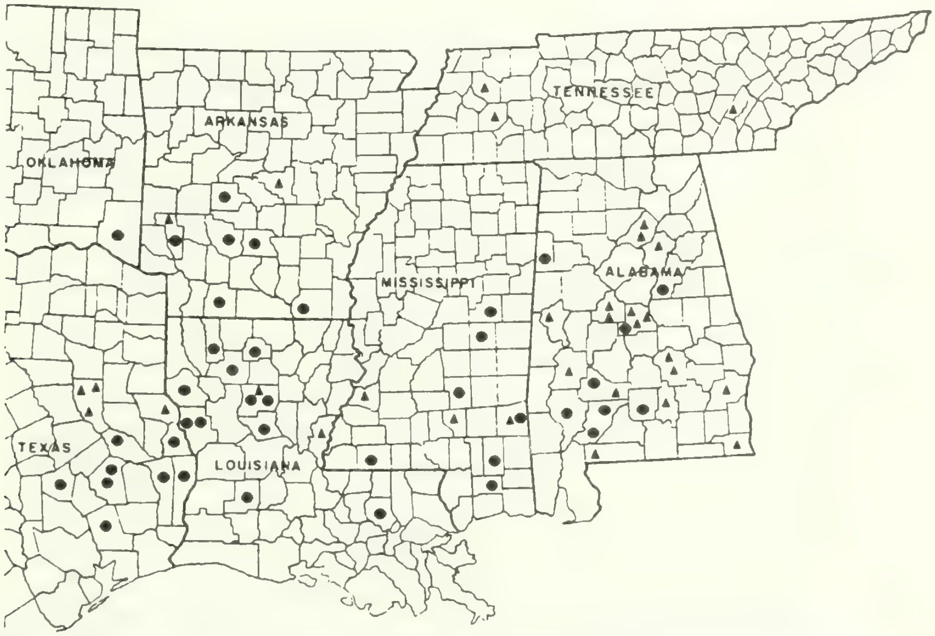

Figure 1.—*The seven Midsouth States and the veneer mills in each. Triangles indicate hardwood veneer mills and dots indicate softwood veneer mills.*

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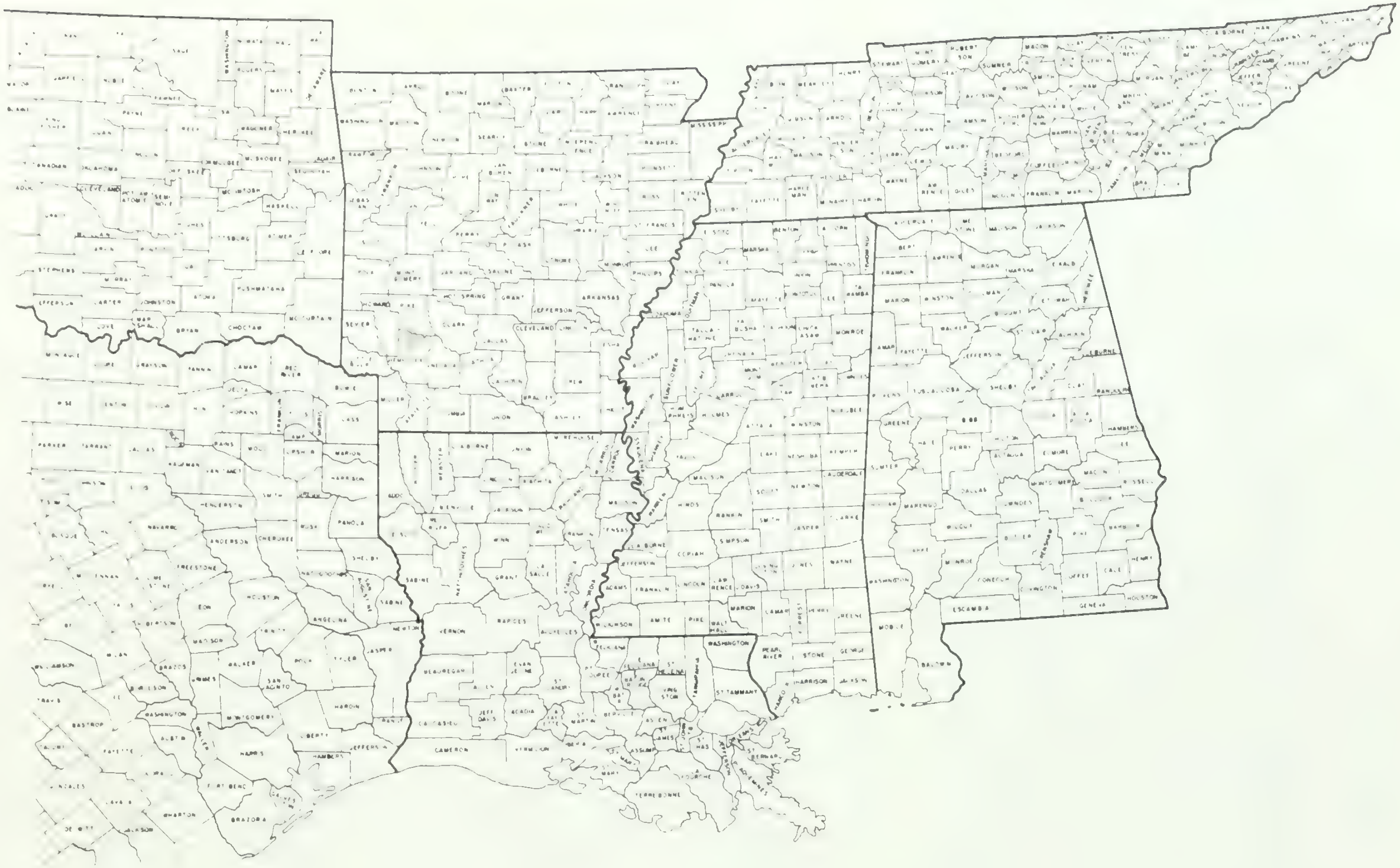

Figure I.—*The States and counties of the Midsouth.*

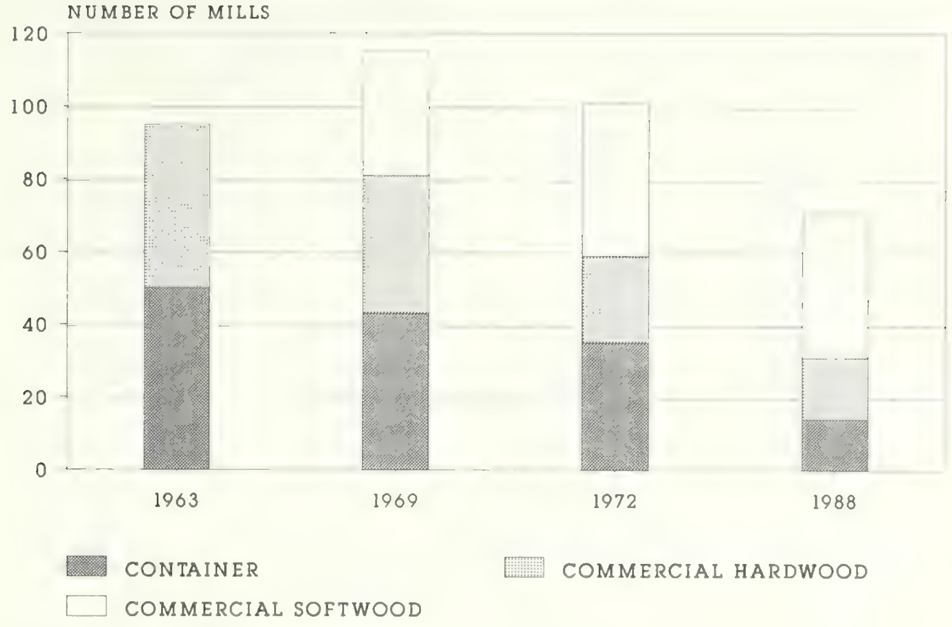

Figure 2.—*Size of the Midsouth veneer industry by mill type.*

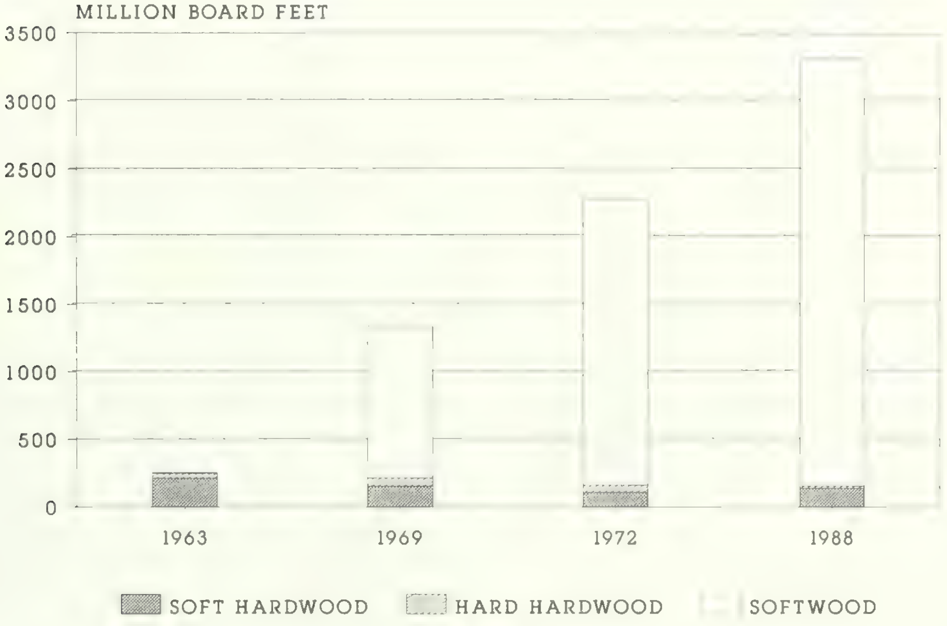

Figure 3.—*Production of Midsouth veneer logs by species group.*

changing markets and shortages of preferred raw materials. This decline was especially true of the container industry, whose products faced stiff competition in the shipping and packing industries from plastics and paperboard.

Surveys in 1969 (Sternitzke 1971) and 1972 (Bertelson 1974) documented the continued decline of these sectors of the industry and revealed a shift in the species composition of the region's production and consumption of hardwood veneer logs. This shift was mainly due to the increased use of soft hardwood species other than the preferred, but increasingly hard-to-obtain, gums and the increased use of hard hardwoods, such as oak and pecan, which were becoming more popular in furniture manufacturing (fig. 4).

The later surveys also documented the birth of the southern pine plywood industry in Arkansas in late 1963. This new sector of the Midsouth veneer industry grew rapidly as it took advantage of the region's expanding southern pine resource and of its proximity to

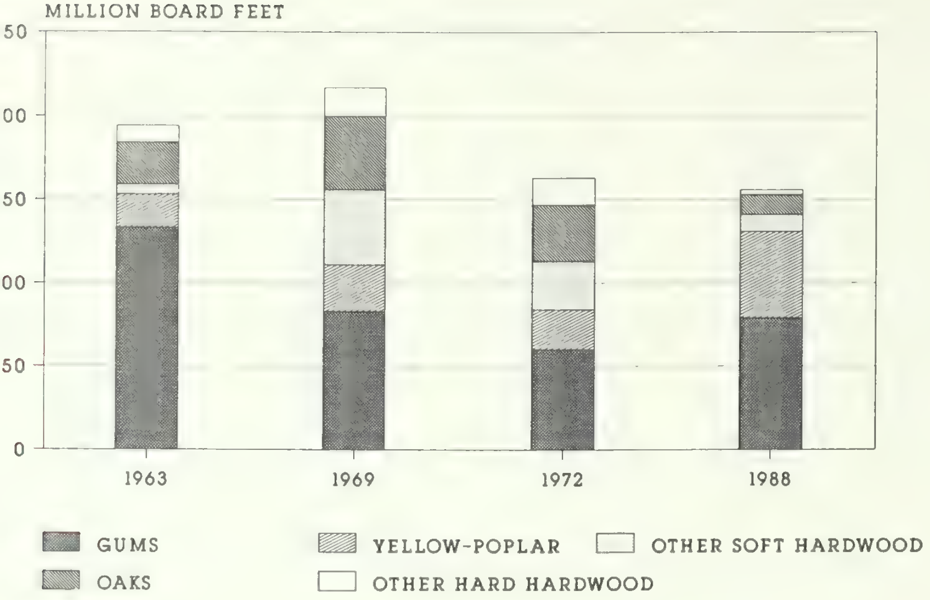

Figure 4.—*Production of Midsouth hardwood veneer logs by species group.*

Table 2.—*Receipts of Midsouth veneer logs by mill type, 1988*

Mill Type	Number	Softwood	Hardwood	Total
		*Thousand board feet**		
Commercial-SW†	41	3,122,237	46,386	3,168,623
Commercial-HW‡	17	1,386	73,689	75,075
Container	14	60	16,827	16,887
All mills	72	3,123,683	136,902	3,260,585

*International $\frac{1}{4}$-inch rule.

†Mills producing primarily softwood veneer.

‡Mills producing primarily hardwood veneer.

the growing urban centers of the East. The growth of this new sector revitalized the Midsouth veneer industry and shifted the region's veneer-log harvest from predominantly hardwood to predominantly softwood (fig. 3).

THE PRESENT

Hardwood Veneer Mills

The 1988 survey reveals that many of the trends observed in the past have continued to the present. Since 1972, the hardwood sector of the industry has continued to decline. Most of this decline has been concentrated in the container veneer mills (fig. 2), which experienced an 80-percent reduction in the volume of veneer logs processed since 1972 (Bertelson 1974 and table 2). As a result, there were more commercial hardwood mills than container mills in 1988, and the former consumed the majority of the region's hardwood veneer-log receipts (table 2). The region's production of hardwood veneer logs has fallen along with the number of operating hardwood mills (fig. 4). Even a 60-percent increase in the production of hardwood veneer logs exported to other regions of the country since 1972 (Bertelson 1974 and table 3) could not offset the production loss associated with the reduced internal demand. Yellow-poplar, oak, and hickory/pecan were the most prevalent hardwood species exported (table 3). Most of the hardwood veneer-log production that was exported out of the Midsouth came from Alabama and Tennessee and was consumed in Georgia and North Carolina (tables 4, 5). Approximately three-quarters of the region's production of hardwood veneer logs occurred in the States east of the Mississippi River (figs. 5, 6). Alabama was the leading producer and consumer of hardwood veneer logs due to the high concentration of hardwood veneer mills within its borders (tables 6, 7; fig. 1).

Softwood Veneer Mills

In contrast to the declining hardwood veneer sector, the softwood veneer sector has continued to gain in dominance, increasing its consumption of veneer logs

Table 3.—*Species composition of Midsouth veneer-log production and receipts, 1988*

Species	Receipts	Exports	Production
	*Thousand board feet**		
Yellow pine	3,123,683	38,050	3,161,733
Redcedar	0	1	1
Total softwood	3,123,683	38,051	3,161,734
Gum	78,433	479	78,912
Yellow-poplar	37,525	14,399	51,924
Cottonwood	7,208	0	7,208
Sycamore	1,090	0	1,090
Elm	568	0	568
Basswood	291	208	499
Black cherry	182	130	312
Bay, magnolia	65	0	65
Sassafras	12	6	18
Total soft hardwood	125,374	15,222	140,596
Oak	10,002	2,411	12,413
Hickory, pecan	1,173	1,849	3,022
Ash	149	158	307
Walnut	118	181	299
Hard maple	86	132	218
Total hard hardwood†	11,528	4,731	16,259
Total hardwood	136,902	19,953	156,855
All species	3,260,585	58,004	3,318,589

*International ¼-inch rule.

†Includes an insignificant volume of persimmon.

even though its size has stabilized after years of growth (fig. 2). This leveling off in the number of mills is a sign of the sector's maturation as veneer production is concentrated in the most efficient mills and is in balance with demand. Although the number of softwood mills has stabilized, these mills, manufacturing mostly pine plywood veneers, comprise the largest segment of the Midsouth veneer industry and process almost all of the softwood veneer logs consumed in the Midsouth (fig. 2, table 2). In addition, some of these mills also produce small amounts of hardwood veneer for use in manufacturing portions of pine plywood or, in some cases, hardwood plywood. As a result, softwood mills as a group also processed a third of the region's hardwood veneer-log receipts in 1988 (table 2). All of the hardwood veneer logs processed were soft hardwood, mostly yellow-poplar and gums, which may explain the increased production of soft hardwoods since 1972 (fig. 4). Production of softwood veneer logs has also increased since 1972, climbing 49 percent even though the number of mills has remained essentially unchanged (Bertelson 1974 and table 6). This statistic is another testimony to the increasing efficiency of the softwood veneer sector. Unlike the production of hardwood veneer logs, production of softwood veneer logs is concentrated in the States west of the Mississippi River (figs. 7, 8). Louisiana is the leading producer of softwood veneer logs (table 6), and Texas is the leading consumer with Louisiana and Arkansas not far behind (table 7).

Wood Residues

In the manufacture of veneers, the Midsouth veneer industry produced a substantial amount of wood and bark residues in 1988 (table 8). The wood residues were comprised predominantly of coarse residues. Coarse residues, such as veneer cores and trimmings, are suitable for use as pulp fiber, and three-quarters of the coarse residues were in fact used for this purpose (table 9). Processing of veneer cores into dimension lumber and landscaping timbers accounted for much of the remaining coarse residues. Almost all of the fine wood and bark residues were burned for industrial fuel. Only a very small percentage of the residues went unused, an improvement in utilization since 1972 when 4 percent of the residues went unused.

Table 4.—*Destination of Midsouth veneer logs by State of origin, 1988*

State of destination	State of origin	Softwood	Hardwood	Total
			Thousand board feet[*]	
Alabama	Alabama	354,980	69,643	424,623
	Mississippi	43,391	7,769	51,160
	Total receipts	398,371	77,412	475,783
Arkansas[†]	Arkansas	554,521	4,860	559,381
	Louisiana	151,350	2,552	153,902
	Texas	13,887	0	13,887
	Total receipts	719,758	7,412	727,170
Florida	Alabama	0	805	805
	Total receipts	0	805	805
Georgia	Alabama	37,677	10,189	47,866
	Total receipts	37,677	10,189	47,866
Indiana	Arkansas	373	153	526
	Louisiana	0	567	567
	Mississippi	0	662	662
	Oklahoma	0	120	120
	Tennessee	0	683	683
	Texas	0	120	120
	Total receipts	373	2,305	2,678
Kentucky	Tennessee	0	178	178
	Total receipts	0	178	178
Louisiana	Arkansas	11,449	0	11,449
	Louisiana	697,956	14,695	712,651
	Mississippi	35	0	35
	Texas	9,695	0	9,695
	Total receipts	719,135	14,695	733,830
Michigan	Tennessee	0	338	338
	Total receipts	0	338	338
Mississippi	Alabama	83,231	0	83,231
	Louisiana	29,012	0	29,012
	Mississippi	380,946	12,773	393,719
	Total receipts	493,189	12,773	505,962
North Carolina	Arkansas	0	96	96
	Louisiana	0	96	96
	Mississippi	0	96	96
	Tennessee	0	5,107	5,107
	Total receipts	0	5,395	5,395
Ohio	Arkansas	0	12	12
	Mississippi	0	41	41
	Oklahoma	0	9	9
	Total receipts	0	62	62
Tennessee	Tennessee	0	6,555	6,555
	Total receipts	0	6,555	6,555
Texas	Louisiana	89,116	4,079	93,195
	Texas	704,114	13,976	718,090
	Total receipts	793,230	18,055	811,285
Virginia	Mississippi	0	19	19
	Tennessee	1	407	408
	Total receipts	1	426	427
West Virginia	Tennessee	0	255	255
	Total receipts	0	255	255
All States	Total production	3,161,734	156,855	3,318,589

[*] International $\frac{1}{4}$-inch rule.

[†] Oklahoma combined with Arkansas to avoid disclosure of individual mill data.

Table 5.—*Movement of Midsouth veneer logs, 1988*

State	Species group	Internal use	Exports within region	Exports out of region	Imports within region
		*Thousand board feet**			
Alabama	Softwood	354,980	83,231	37,677	43,391
	Hardwood	69,643	0	10,994	7,769
	Total	424,623	83,231	48,671	51,160
Arkansas†	Softwood	554,521	11,449	373	165,237
	Hardwood	4,860	0	390	2,552
	Total	559,381	11,449	763	167,789
Louisiana	Softwood	697,956	269,478	0	21,179
	Hardwood	14,695	6,631	663	0
	Total	712,651	276,109	663	21,179
Mississippi	Softwood	380,946	43,426	0	112,243
	Hardwood	12,773	7,769	818	0
	Total	393,719	51,195	818	112,243
Tennessee	Softwood	0	0	1	0
	Hardwood	6,555	0	6,968	0
	Total	6,555	0	6,969	0
Texas	Softwood	704,114	23,582	0	89,116
	Hardwood	13,976	0	120	4,079
	Total	718,090	23,582	120	93,195
All States	Softwood	2,692,517	431,166	38,051	431,166
	Hardwood	122,502	14,400	19,953	14,400
	Total	2,815,019	445,566	58,004	445,566

*International ¼-inch rule.

†Oklahoma combined with Arkansas to avoid disclosure of individual mill data.

Table 6.— *Midsouth veneer-log production by State, 1988*

State	Softwood	Hardwood	Total
	*Thousand board feet**		
Alabama	475,888	80,637	556,525
Arkansas	531,610	5,057	536,667
Louisiana	967,434	21,989	989,423
Mississippi	424,372	21,360	445,732
Oklahoma	34,733	193	34,926
Tennessee	1	13,523	13,524
Texas	727,696	14,096	741,792
All States	3,161,734	156,855	3,318,589

*International ¼-inch rule.

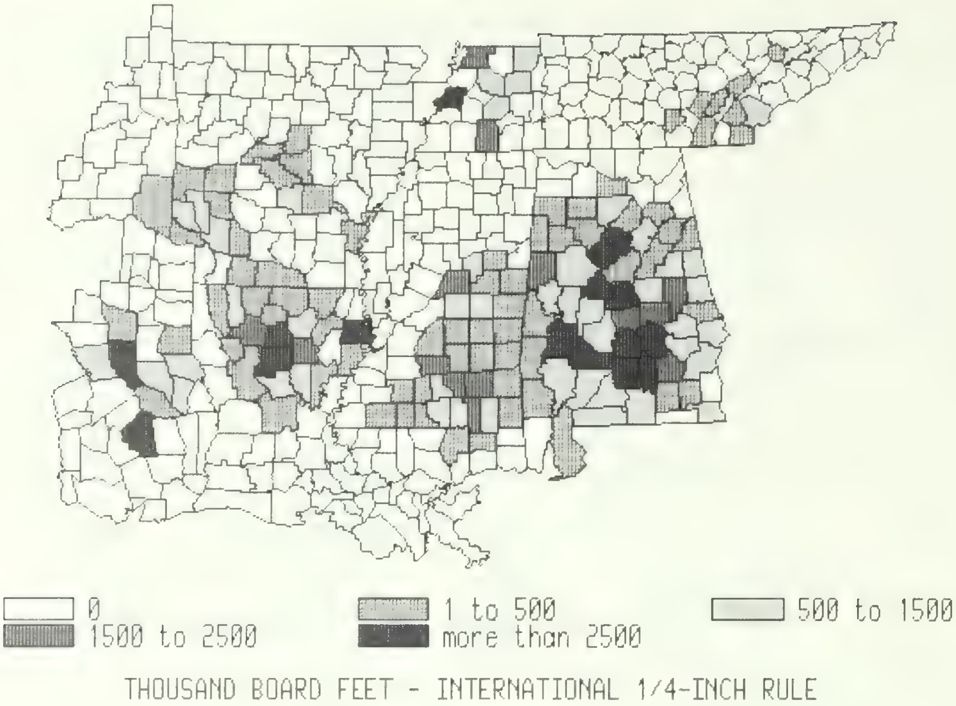

Figure 5.—*Hardwood veneer-log production by county, 1988.*

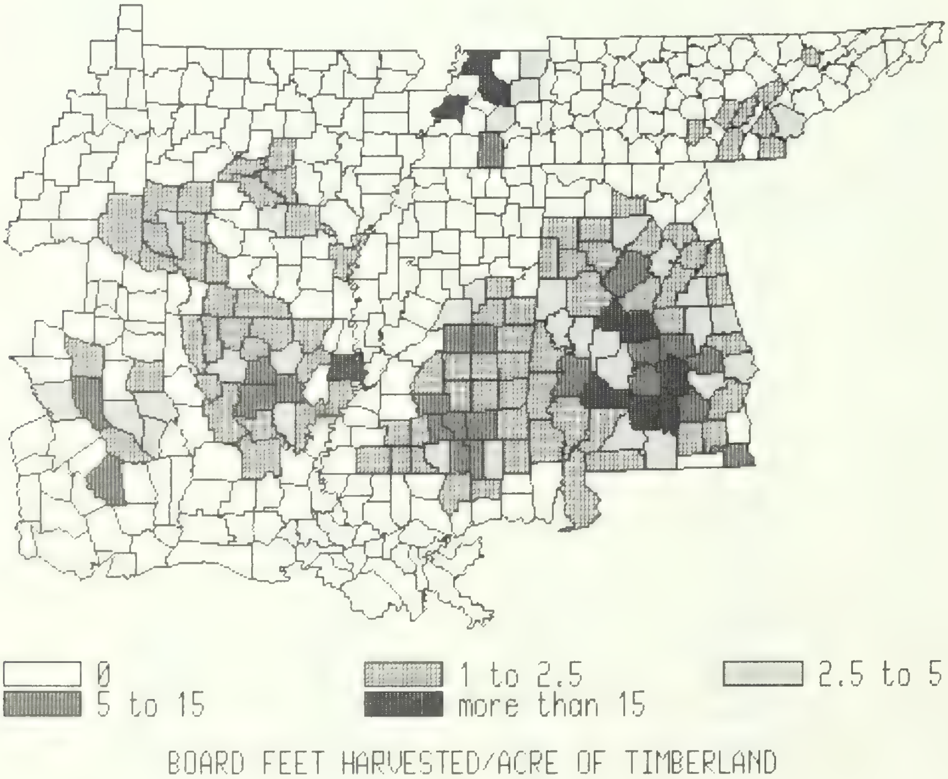

Figure 6.—*Hardwood veneer-log harvesting intensity by county, 1988.*

Table 7.—*Midsouth veneer-log receipts by State, 1988*

State	Softwood	Hardwood	Total
	*Thousand board feet**		
Alabama	398,371	77,412	475,783
Arkansas†	719,758	7,412	727,170
Louisiana	719,135	14,695	733,830
Mississippi	493,189	12,773	505,962
Tennessee	0	6,555	6,555
Texas	793,230	18,055	811,285
All States	3,123,683	136,902	3,260,585

*International ¼-inch rule.

†Oklahoma combined with Arkansas to avoid disclosure of individual mill data.

Table 8.—*Volume of wood residues produced from Midsouth veneer mills, 1988*

	Softwood			Hardwood		
State	Bark	Coarse	Fine	Bark	Coarse	Fine
	Thousand cubic feet					
Alabama	12,724	24,739	1,076	1,438	4,807	209
Arkansas*	22,988	44,697	1,943	138	460	20
Louisiana	22,969	44,658	1,942	273	913	40
Mississippi	15,752	30,627	1,332	237	793	34
Tennessee	0	0	0	122	407	18
Texas	25,335	49,260	2,142	336	1,121	49
All States	99,768	193,981	8,435	2,544	8,501	370

*Oklahoma combined with Arkansas to avoid disclosure of individual mill data.

Table 9.—*Disposition of Midsouth veneer mill wood residues, 1988*

	Softwood			Hardwood		
Disposition	Bark	Coarse	Fine	Bark	Coarse	Fine
	Thousand cubic feet					
Fiber	0	153,322	852	2	6,678	*
Industrial fuel	99,438	11,367	7,558	2,541	1,230	370
Bedding, mulch	160	136	0	0	0	0
Dimension lumber, specialty items	0	28,826	0	0	590	0
Not used	170	330	25	1	3	*
Total	99,768	193,981	8,435	2,544	8,501	370

*Less than 0.5 thousand cubic feet.

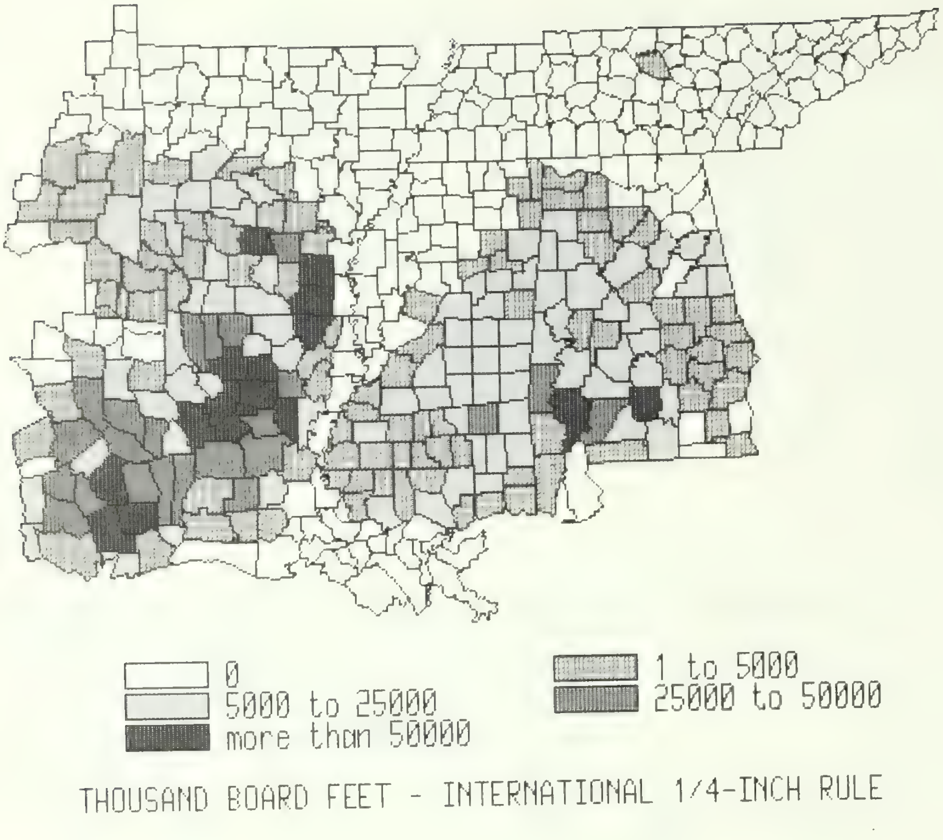

Figure 7.—*Softwood veneer-log production by county, 1988.*

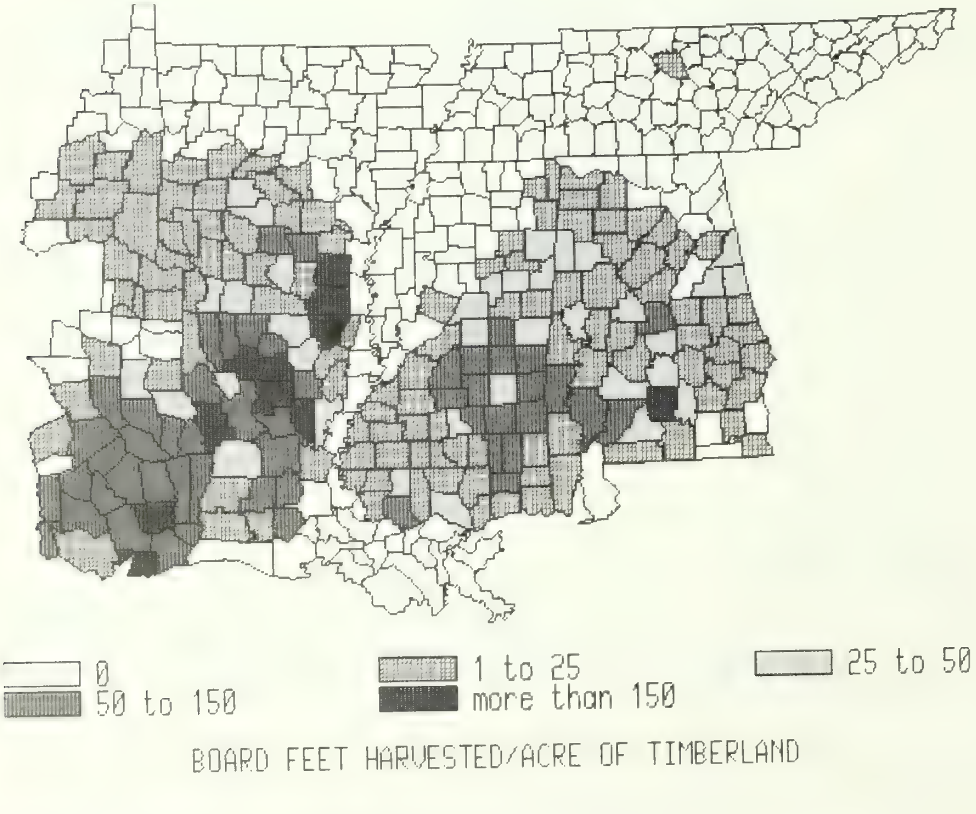

Figure 8.—*Softwood veneer-log harvesting intensity by county, 1988.*

THE FUTURE

The Midsouth veneer industry has changed considerably over the years and is today one of the leading primary forest industries in the region. Today's industry was built around the expanding southern pine resource of the region, and its future depends on its ability to continue to utilize this resource. However, the shifting of this resource from natural to planted stands (USDA FS 1988) has raised concerns over the size, quality, and quantity of future veneer logs, especially if the plantations are managed on short rotations (Kellison 1986, Kluender and others 1988). One method of coping with the changing resource base will be the adoption of current and future technologies, such as the spindleless lathe, that will allow more efficient conversion of smaller logs into veneer (Baldwin 1987, Kellison 1986, Spelter and Sleet 1989). Additionally, new technologies may provide opportunities to market new products, such as dimension lumber and structural beams produced from laminated veneers, which may strengthen the position of the Midsouth veneer industry (Pease 1987, Price 1986).

On the other hand, other new technologies are currently threatening the position of today's veneer industry. Reconstituted panel products, such as waferboard and oriented strandboard, are continually gaining market shares over veneer plywoods. Similar structural performance and lower cost are the main reasons for their market acceptance (Dickerhoff 1986, Seward and Sinclair 1988). The lower cost is due in part to lower raw material costs because these products utilize traditionally underutilized, smaller, and poorer quality trees (Price 1986). Ultimately, the future of the Midsouth veneer industry will depend on its continued ability to change in order to utilize its raw material source and take advantage of new technologies to meet market demands.

LITERATURE CITED

Baldwin, Richard F. 1987. New developments in plywood green ends. Forest Industries. 114(6): 18–23.

Bertelson, Daniel F. 1974. Midsouth veneer industries, 1972. Resour. Bull. SO-47. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 11 p.

Christopher, Joe F.; Sternitzke, Herbert S. 1964. Midsouth veneer industry. Resour. Bull. SO-5. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 12 p.

Dickerhoff, H. Edward. 1986. Changing U.S. softwood timber markets and international trade trends with implications for domestic forest products production. Forest Products Journal. 36(10): 35–40.

Kellison, Robert C. 1986. Future technology and timber supply may change construction lumber products. Forest Farmer. 45(9): 24–26.

Kluender, R.A.; McCoy, E.W.; and Easterling, J.K. 1988. The Arkansas forest products industry. Bull 908. Fayetteville, AR: Arkansas Agricultural Experiment Station, University of Arkansas, Division of Agriculture. 41 p.

Pease, Davis A. 1987. Symposium takes a look at lumber composites. Forest Industries. 114(5): 16–17.

Price, Eddie W. 1986. New products for southern timber resources. In: Carpenter, Stanley B., ed. Proceedings: southern forestry symposium; 1985 November 19–21; Atlanta, GA. Stillwater, OK: Oklahoma State University Agricultural Conference Services. 181–184.

Seward, Kevin E; Sinclair, Steven A. 1988. Retailer's perceptions of structural panel attributes and market segments. Forest Products Journal. 38(4): 25–31.

Spelter, Henry; Sleet, George. 1989. Potential reductions in plywood manufacturing costs resulting from improved technology. Forest Products Journal. 39(1): 8–15.

Sternitzke, Herbert S. 1971. Midsouth veneer log production Resour. Bull. SO-25. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 8 p.

U.S. Deparment of Agriculture, Forest Service. 1988. The South's fourth forest: alternatives for the future. Forest Resource Report 24. Washington, DC: U.S. Department of Agriculture Forest Service. 512 p.

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May, Dennis M.; Vissage, John S. Midsouth veneer industry. Resour. Bull. SO-154. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station; 1990. 11 p.

Reports the findings of a survey of all veneer mills receiving veneer logs from the Midsouth in 1988. Production and receipts of veneer logs are reported by State, mill type, and species. The production and disposition of wood and bark residues generated by the Midsouth veneer industry are also reported. Changes in veneer-log production and receipts and wood residue production from previous surveys are also followed and discussed.

Keywords: Bark, consumption, production, veneer log, wood residue.

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Forest Statistics for Southwest-South Alabama Counties – 1990

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John S. Vissage

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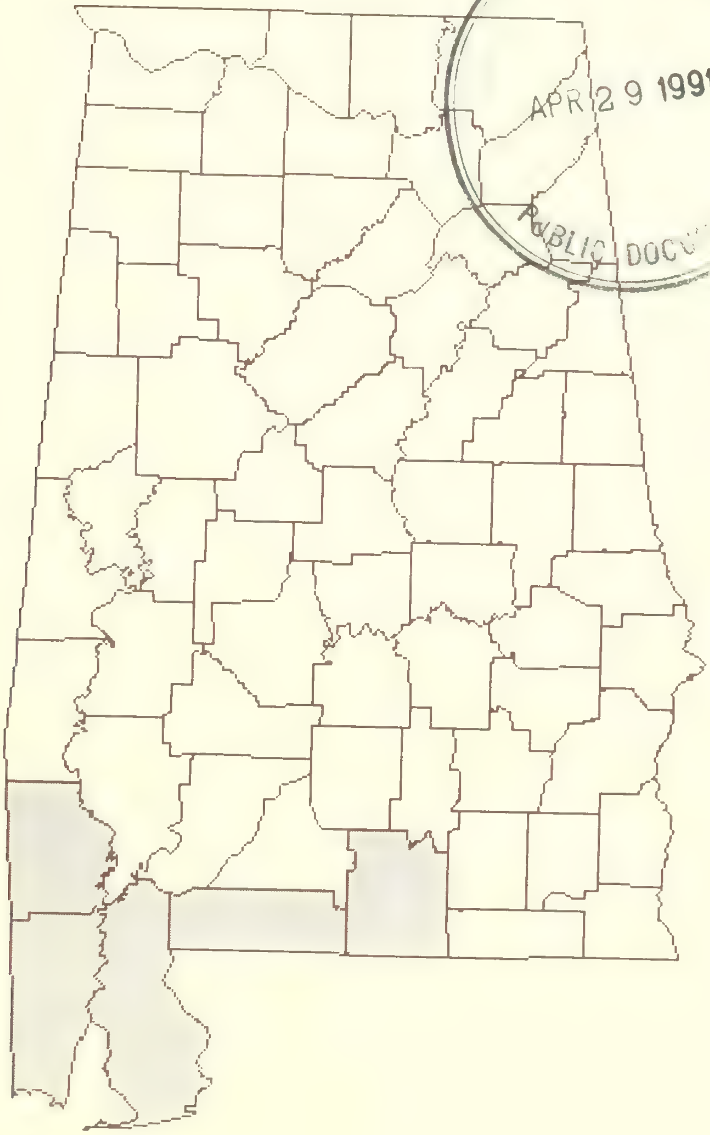

SUMMARY

The 1990 forest inventory of Southwest-South Alabama revealed the following:

- Timberland area is 2,741.0 thousand acres, a decrease of 4 percent.
- The area of pine and oak-pine timberland decreased by 4 percent. The area of planted pine stands increased by 16 percent.
- The area of bottomland hardwood forest types decreased by 10 percent.
- Live-tree inventory volume totals 2,951.4 million cubic feet, a 6-percent increase over 1982. The volume of softwoods increased by 4 percent and hardwoods increased by 9 percent.
- Average net growth of live trees increased by 50 percent since the previous inventory period .
- The removals of live trees increased by 9 percent, primarily due to a 42 percent increase in hardwood removals.
- The growth-to-removals relationship improved for both hardwoods and softwoods.

FOREWORD

The USDA-Forest Service, Southern Forest Experiment Station, Forest Inventory and Analysis unit (SO-FIA), conducts forest inventories covering the States of Alabama, Arkansas, Louisiana, Mississippi, Oklahoma, Tennessee, Texas, and the island of Puerto Rico.

The SO-FIA forest inventories are part of a nationwide effort originally authorized by the McSweeney-McNary Act of 1928. More recent legislation pertinent to the SO-FIA mission includes the Forest and Rangeland Renewable Resources Planning Act of 1974 and the Forest and Rangeland Renewable Resources Research Act of 1978. The SO-FIA mission is to develop, analyze, and maintain forest resource information that is essential for formulation of forest policies and programs.

ACKNOWLEDGMENTS

The SO-FIA gratefully acknowledges the cooperation and excellent assistance provided by the Alabama Forestry Commission in collecting field data. Appreciation is also expressed for the cooperation of other public agencies and private landowners in providing access to measurement plots.

The following members of the SO-FIA field staff completed the field measurements:

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[1] Core tables are presented in response to the Southern Industrial Forestry Research Council's recommendations. These tables are identical among Forest Inventory and Analysis units in the eastern United States.

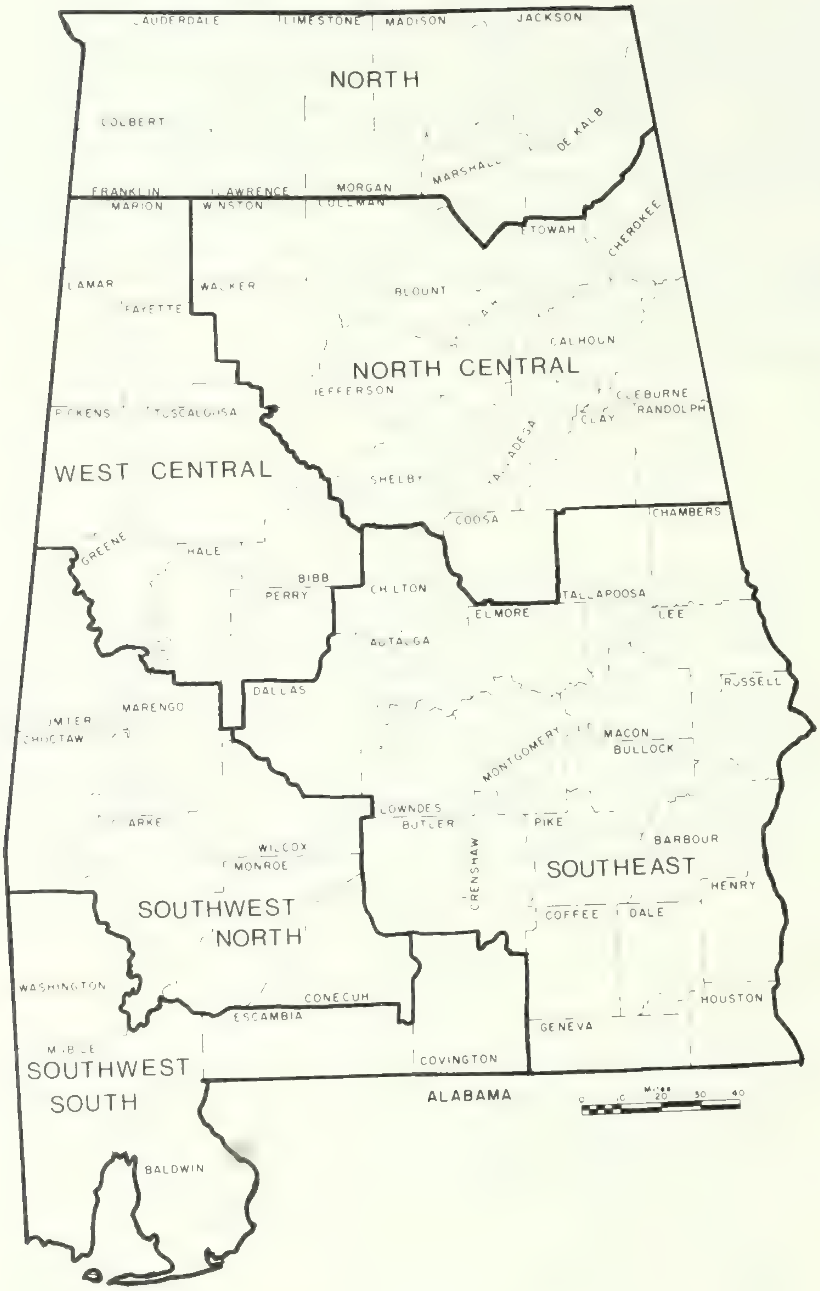

Figure I.—*Forest survey regions in Alabama.*

Forest Statistics for Southwest-South Alabama Counties — 1990

William H. McWilliams, Patrick E. Miller, and John S. Vissage

INTRODUCTION

Tabulated results were derived from data obtained during a recent forest inventory of Southwest-South Alabama (fig. I). Core tables (1 to 25) are compatible among Forest Inventory and Analysis units in the Eastern U.S. Other tables (26 to 43) supplement the information contained in the core tables. Comparisons are made between results of the 1990 inventory and previous inventories conducted in 1982 and 1972.

METHODS

The SO-FIA uses a two-phase sample of temporary aerial-photo points and a systematic grid of permanent ground plots. The area of forested land was determined by photointerpretation of temporary points and field checks of permanent plots. Field measurements were conducted on a subset of permanent plots spaced 3 miles apart. Tree data were collected on measurement plots that were forested at the time of the current inventory, or were forested at the time of the previous inventory.

Each measurement plot consisted of 10 satellite points spread over an acre of forest. At each point, trees 5.0 inches in diameter at breast height and larger were selected for measurement on a variable-radius plot defined by a 37.5 BAF prism. Trees from 1.0 to 4.9 inches in diameter were tallied on 1/275 acre fixed plots at the first three points and at any remaining points where fewer than two trees 5.0 inches in diameter or larger were tallied. If no trees greater that 1.0 inch were tallied at a point, then seedlings were tallied. Several plot-level measurements relating to timber and non-timber assessment were also collected.

Tree data were used to estimate volumes, basal area, number of trees, and other per-acre variables. Ownership information was obtained for each measurement plot using tax records and other sources. Per acre estimates were expanded using county-level factors derived as part of the forest area determination. Thus, estimates at the county level may not match exactly with known totals for a particular variable.

In order to achieve greater compatibility among Forest Inventory and Analysis units, a modified tree classification system has been in effect since the 1988 inventory of Arkansas. Tree grade 5 is used to designate trees capable of producing at least one 12-foot log or two 8-foot logs in the saw-log portion, but not capable of producing a gradable 12-foot log in the butt 16-foot section. These trees - formerly classed as rough or rotten - are now included in growing stock. Any comparisons with previous estimates of growing stock are based on data that has been reprocessed to account for the change in definition. Because of the revised definition, and to better assess changes in whole-forest conditions; analysis of trends in inventory volume, growth, removals, and mortality will focus on live trees.

SAMPLING ERROR

The sampling methods were designed to achieve suitable sampling errors for estimates of area and volume at the State level. Sampling error increases as the area or volume considered decreases. The sampling errors presented in table I, equal to one standard deviation for the sample data, may be used to compute confidence intervals for population estimates. For example, at the 95 percent confidence level, the confidence interval for live-tree volume (in million cubic feet) is:

$$2{,}951.4 \pm 1.96\,(0.04 \times 2{,}951.4) = 2{,}951.4 \pm 231.4$$

where 1.96 is the number of standard deviations. This confidence interval indicates a 0.95 probability that the range, 2,720.0 to 3,182.8 million cubic feet, will cover the true live-tree inventory volume.

The results are reported for individual counties so that users may combine counties as desired. It is not recommended that individual county data be used in isolation. The user should combine data for as many counties as possible. Sampling error for a combination of counties may be estimated using the following formula:

$$SE_g = \frac{SE_t \sqrt{X_t}}{\sqrt{X_g}}$$

where:

SE = standard error of estimate (expressed as a percent)
X = variable of interest (area or volume)
g = group of counties to be combined
t = total for the unit.

For example, the estimate of sampling error for live-tree volume in Baldwin, Escambia, Mobile, and Washington counties is 4.3 percent. The 95 percent confidence interval for live-tree volume is 2,520.0 ± 212.4 million cubic feet.

RESULTS

Area

The topography of Southwest-South Alabama consists of flat to gently rolling uplands common to lower portions of the East Gulf Coastal Plain. Alluvial lowlands are found at

Table I—*Sampling errors*[1] *for timberland, live trees, growing stock, and sawtimber, Southwest-South Alabama Counties, 1990*

County	Timberland	Live trees			Growing stock			Sawtimber volume
		Volume	Growth	Removals	Volume	Growth	Removals	
	Percent							
Baldwin	1.6	8.5	8.8	18.2	8.4	8.3	18.4	10.0
Covington	2.1	8.4	10.1	23.5	8.6	10.4	23.6	10.6
Escambia	1.4	8.5	9.2	19.0	8.4	9.1	19.0	11.2
Mobile	1.4	11.8	12.8	21.0	12.1	13.0	21.0	14.5
Washington	1.0	7.4	7.7	18.2	7.5	7.9	17.8	9.9
All counties	0.7	4.0	4.3	9.1	4.0	4.3	9.1	5.1

[1] By random-sampling formula.

the confluence of the Tombigbee and Alabama Rivers, and southward along the Mobile River. The region is heavily forested. Forests cover 2.7 million acres or 73 percent of the land area. All of the forest land is classified as timberland capable of producing industrial wood products. The area of timberland decreased slightly, by 4 percent.

Ninety-five percent of the timberland is privately owned. Private timberland is divided among nonindustrial private owners and forest industries that own 59 percent and 36 percent of the region's timberland, respectively. Nonindustrial owners are a diverse group made up of miscellaneous individuals, farmers, and corporations (other than forest industry). The estimate of forest industry timberland includes 140.8 thousand acres of timberland under long-term lease from nonindustrial private owners. Public owners hold 5 percent of the timberland. Sixty percent of the public timberland, or 80.9 thousand acres, is located in the Conecuh National Forest of Escambia and Covington counties.

Longleaf-slash pine is the most prevalent forest type in the region (843.2 thousand acres or 31 percent of the timberland), despite a decrease in the area of the type. The longleaf-slash pine forest type is separated into longleaf pine stands (pine stands dominated by longleaf pine) and slash pine stands (pine stands dominated by slash pine). Longleaf pine stands total 379.0 thousand acres and slash pine stands total 464.2 thousand acres. Both the longleaf and slash pine cover types decreased in area since 1982; the longleaf type by 18 percent and the slash pine type by 13 percent. Concurrent with these decreases was a 34 percent increase in the area of loblolly-shortleaf pine stands (nearly all of which are loblolly pine stands) that now occupy 14 percent of the timberland base.

The area of pine forest types decreased by 4 percent. The area of planted pine stands increased by 16 percent and totals 481.6 thousand acres. Planted pine stands are 39 percent of the pine-type timberland. There are an additional 90.2 thousand acres with evidence of planting or direct seeding that are classified as oak-pine and hardwood forest types due to the stocking of hardwoods.

Oak-pine is the second most common forest type and includes stands that are dominated by hardwood species, but are at least 25 percent stocked with pines. The oak pine forest type occupies 599.7 thousand acres (22 percent of the timberland) and decreased by 4 percent.

Hardwood forests account for one third of the region's timberland (900.8 thousand acres) and are split equally between the oak-hickory and oak-gum-cypress forest types. The oak-hickory forest type increased by 6 percent and the oak-gum-cypress type decreased by 9 percent.

The distribution of acreage by stocking class gives an indication of overall forest vigor. Stocking is assessed by comparing existing stand density to a standard that represents full stocking or 100 percent. The optimal range of stocking is between 60 and 100 percent of the standard. The area of timberland decreased in the understocked and overstocked classes, but increased by 21 percent in the optimal stocking class.

Inventory

The volume of live trees increased by 6 percent, totaling 3.0 billion cubic feet. The volume of softwoods increased by 4 percent and the volume of hardwoods increased by 9 percent. The volume of live trees includes the merchantable sound-wood volume of growing-stock trees, rough trees, and rotten trees that are at least 5.0 inches in diameter at breast height. The growing-stock component of live-tree volume - the volume of trees with good management potential - comprises 94 percent of the live-tree volume.

The volume of live trees is 59 percent softwood and 41 percent hardwood. Three species contribute over 90 percent of the softwood inventory volume: slash pine (36 percent), longleaf pine (35 percent), and loblolly pine (20 percent). The most abundant hardwood species are gums (28 percent), red oaks (20 percent), sweetgum (7 percent), and yellow poplar (6 percent).

Shifts in the distribution of live-tree volume by diameter class clarify recent trends. For softwoods, decreases were apparent in most of the smaller diameter classes (the 8-inch class was an exception). The inventory increased in the 14-inch and larger classes. For hardwoods, decreases occurred in the 6- and 8-inch classes - a reversal of increases that took place in this range between 1972 and 1982. Increases occurred in the 10-inch and larger classes.

Components of Change

Changes in the volume of live trees depend on three components: gross growth, mortality, and removals. Annual estimates of change are based on the period from the year of

Table II—*Components of average annual change in the volume of live trees by inventory period and species group, Southwest-South Alabama Counties, 1990*

Inventory period and species group	Gross Growth		
	Net growth	Mortality	Removals
	Million cubic feet		
1972 to 1981:			
Softwoods	70.2	14.7	75.4
Hardwoods	20.0	19.8	17.7
Total	90.2	34.5	93.1
1982 to 1989:			
Softwoods	89.0	10.0	76.9
Hardwoods	46.7	16.6	25.2
Total	135.7	26.6	102.1

the previous inventory through the year prior to the present inventory. Gross growth of live trees was 162.3 million cubic feet for the period prior to 1990, a 30 percent increase over the period from 1972 to 1981 (table II). Net growth - equal to gross growth minus mortality - increased by 50 percent. Softwoods contributed 66 percent of the total net growth and hardwoods contributed 34 percent. The net growth of softwoods increased by 27 percent and the net growth of hardwoods more than doubled.

Removals of live trees, 102.1 million cubic feet, was 10 percent higher than the period prior to 1982. Removals were 75 percent softwood and 25 percent hardwood. Softwood removals increased by a minor 2 percent. Hardwood removals increased by 42 percent.

The ratio of net growth-to-removals is one measure of a forest's capacity to expand in volume. A ratio greater than 1.0:1.0 usually indicates increases in inventory volume. For the current inventory period, the growth-to-removals ratio was 1.3:1.0; increasing from 1.0:1.0 since the previous inventory period. An improvement in the growth-to-removals relationship was apparent for both species groups.

CONCLUSIONS

The Southwest-South region of Alabama continues as a major source of forest-related resources in spite of a reduction in timberland area. An increase in both the area of optimally-stocked stands and the area of planted pine stands illustrate that intensification of forest management has continued in the 1980's. The region has supplied an increased volume of timber to the forest products industry due to an increase in hardwood removals. An improvement in the relationship between net growth and removals of both softwoods and hardwoods suggests an opportunity for further inventory expansion in the future.

DEFINITION OF TERMS

Average net annual growth.—Average net annual volume increase for the inventory period.

Average annual mortality.—Average annual sound-wood volume of trees dying from natural causes.

Average annual removals.—Average net annual volume of trees removed from the inventory by harvesting, cultural operations (such as timber-stand improvement), land clearing, or changes in land use.

Commercial species.—Tree species which normally develop into trees suitable for industrial wood products.

Forest land.—Land at least 16.7 percent stocked by forest trees of any size, or formerly having such tree cover, and not currently developed for nonforest use.

Forest type.—A classification of forest land based upon the species forming a plurality of live-tree stocking.

Growing-stock trees.—Live trees of commercial species. Rough and rotten trees are excluded.

Growing-stock volume.—The cubic-foot volume of sound wood in growing-stock trees at least 5.0 inches in diameter at breast height, from a l-foot stump to a minimum 4.0-inch top diameter outside bark of the central stem, or to the point where the central stem breaks into limbs.

Live trees.—Commercial and noncommercial tree species of sapling size or larger.

Live-tree volume.—The cubic-foot volume of sound wood in live trees at least 5.0 inches in diameter at breast height, from a l-foot stump to a minimum 4.0-inch top diameter outside bark of the central stem, or to the point where the central stem breaks into limbs.

Natural stands.—Stands with no evidence of artificial regeneration. This includes those established by seed tree regeneration methods.

Noncommercial species.—Tree species of typically small size, poor form, or inferior quality which normally do not develop into trees suitable for industrial wood products.

Planted stands.—Stands with evidence of planting or direct seeding.

Poletimber trees.—Live trees at least 5.0 inches in diameter at breast height, but smaller than sawtimber size.

Reserved timberland.—Productive public forest land withdrawn from timber utilization through statute or administrative regulations.

Rotten trees.—Live trees of commercial species that do not contain at least one 12-foot log or two 8-foot logs in the saw-log portion, now or prospectively, primarily because of rot.

Rough trees.—Live trees of commercial species that do not contain at least one 12-foot log or two 8-foot logs in the saw-log portion, now or prospectively, primarily because of roughness or poor form. Also included are live trees of noncommercial species.

Saplings.—Live trees at least 1.0 inches but less than 5.0 inches in diameter at breast height.

Sawtimber trees.—Live trees that contain at least one 12-foot log or two 8-foot logs in the saw-log portion, and meet regional specifications for freedom from defect. Softwoods must be at least 9.0 inches in diameter at breast height and hardwoods at least 11.0 inches in diameter at breast height.

Sawtimber volume.—Sound-wood volume of the saw-log portion of growing-stock sawtimber trees in board feet (International 1/4-inch rule) and in cubic feet.

Seedlings.—Live trees less than 1.0 inch in diameter at breast height and greater than one foot tall for hardwoods, greater than six inches tall for softwoods, and greater than one-half inch in diameter at ground level for longleaf pine.

Select red oaks.—A classification of several red oak species composed of: cherrybark, Shumard, and northern red oaks.

Select white oaks.—A classification of several white oak species composed of: white, swamp chestnut, swamp white, chinkapin, Durand, and bur oaks.

Site class.—A classification of forest land in terms of inherent capacity to grow crops of industrial wood.

Stand-size class.—A classification of forest land based on the diameter class of live trees on the sampled area; that is, sawtimber, poletimber, or sapling and seedling.

Timberland.—Forest land that is producing, or is capable of producing, crops of industrial wood and not withdrawn from timber utilization. Timberland is synonymous with "commercial forest land" in prior reports.

Tree grade.—A classification of the volume of the saw-log portion of sawtimber trees, based on: 1) the log grade of the butt log, or 2) ability to produce at least one 12-foot or two 8-foot logs in the upper-section of the saw-log portion.

Woodland.—Forest land incapable of yielding crops of industrial wood because of adverse site conditions.

Table 1—*Area by county and land class, Southwest-South Alabama Counties, 1990*

County	All land[1]	Forest land				Nonforest land
		Total	Timberland[2]	Woodland[3]	Reserved timberland	
	Thousand acres					
Baldwin	1017.2	662.1	662.1	...	...	355.1
Covington	664.3	473.7	473.7	...	...	190.6
Escambia	608.5	471.9	471.9	...	...	136.6
Mobile	792.3	499.1	499.1	...	...	293.2
Washington	691.7	634.2	634.2	...	...	57.5
All counties	3774.1	2741.0	2741.0	...	...	1033.1

[1] From U.S. Bureau of the Census.

[2] Forest land (formerly termed commercial forest land) that is producing or capable of producing at least 20 cubic feet of industrial wood per acre per year. Includes areas which may be inaccessible or inoperable by current standards. Excludes reserved timberland.

[3] Forest land incapable of producing 20 cubic feet of industrial wood per acre per year under natural conditions because of adverse site conditions.

Table 2—*Area of timberland by county and ownership class, Southwest-South Alabama Counties, 1990*

County	All ownerships	National forest	Misc. federal	State	County and municipal	Forest industry[1]	Farmer	Corporate[2]	Individual[2]
	Thousand acres								
Baldwin	662.1	...	5.1	10.3	...	272.0	56.5	123.2	195.0
Covington	473.7	53.9	...	...	...	164.5	164.5	5.7	85.1
Escambia	471.9	27.0	...	11.4	5.7	273.8	45.6	...	108.4
Mobile	499.1	...	...	5.4	16.1	64.4	48.3	91.2	273.7
Washington	634.2	...	...	...	...	205.2	99.5	49.7	279.8
All counties	2741.0	80.9	5.1	27.0	21.8	979.9	414.4	269.8	942.0

[1] Includes land leased to forest industry.

[2] Indian land will be classed as corporate or individual as defined by the Bureau of Indian Affairs.

Table 3—*Area of timberland by county and forest type group, Southwest-South Alabama Counties, 1990*

County	Total	Forest type group							
		Longleaf-slash pine		Loblolly-shortleaf pine					
		Planted	Natural	Planted	Natural	Oak-pine	Oak-hickory	Oak-gum-cypress	Nonstocked[1]
	Thousand acres								
Baldwin	662.1	71.9	148.8	20.5	41.1	123.2	112.9	143.7	...
Covington	473.7	44.8	60.8	79.4	51.1	88.1	107.2	42.3	...
Escambia	471.9	68.4	130.3	39.9	39.9	105.1	42.6	45.6	...
Mobile	499.1	16.1	134.2	16.1	10.7	134.2	96.6	85.9	5.4
Washington	634.2	74.6	93.3	49.7	43.5	149.2	99.5	124.4	...
All counties	2741.0	275.9	567.3	205.7	186.3	599.7	458.9	441.8	5.4

[1] Timberland with no current stocking.

Table 4—*Area of timberland by county and stand-size class, Southwest-South Alabama Counties, 1990*

County	All classes	Stand-size class			
		Sawtimber	Poletimber	Sapling-seedling	Nonstocked[1] areas
	Thousand acres				
Baldwin	662.1	220.7	169.4	266.9	5.1
Covington	473.7	121.0	155.2	197.5	...
Escambia	471.9	198.7	114.1	159.1	...
Mobile	499.1	134.2	96.6	257.6	10.7
Washington	634.2	254.9	167.9	205.2	6.2
All counties	2741.0	929.6	703.1	1086.2	22.1

[1] Timberland less than 16.7 percent stocked.

Table 5—*Area of timberland by county and site class, Southwest-South Alabama Counties, 1990*

County	All classes	Site class (cubic feet/acre/year)				
		> 165	120-165	85-120	50-85	< 50
	Thousand acres					
Baldwin	662.1	5.1	51.3	292.5	246.4	66.7
Covington	473.7	28.4	67.5	229.9	142.2	5.7
Escambia	471.9	11.4	79.6	187.6	187.6	5.7
Mobile	499.1	5.4	32.2	187.8	220.0	53.7
Washington	634.2	31.1	99.5	329.5	161.7	12.4
All counties	2741.0	81.4	330.1	1227.4	957.9	144.2

Table 6—*Area of timberland by county and stocking classes of growing-stock trees, Southwest-South Alabama Counties, 1990*

County	All classes	Stocking class (percent)				
		> 130	100-130	60-100	16.7-60	< 16.7
	Thousand acres					
Baldwin	662.1	20.5	189.9	297.7	128.3	25.7
Covington	473.7	34.0	121.2	251.0	61.9	5.7
Escambia	471.9	25.5	108.1	287.3	51.0	...
Mobile	499.1	21.5	69.8	279.0	102.0	26.8
Washington	634.2	37.3	143.0	422.8	24.9	6.2
All counties	2741.0	138.9	631.9	1537.8	368.0	64.4

Table 7—*Area of timberland by forest type and ownership class, Southwest-South Alabama Counties, 1990*

Forest type[1]	All ownerships	National forest	Other public	Forest industry	Forest industry-leased	Other private
	Thousand acres					
Longleaf-slash pine	843.2	36.8	16.4	315.2	92.2	382.6
Loblolly-shortleaf pine	392.0	...	5.1	151.0	23.8	212.1
Softwood total	1235.2	36.8	21.6	466.3	116.0	594.7
Oak-pine	599.7	33.8	21.9	116.3	...	427.7
Oak-hickory	458.9	7.8	5.4	92.7	6.2	346.8
Oak-gum-cypress	441.8	2.6	5.1	163.8	18.7	251.6
Hardwood total	1500.4	44.2	32.4	372.8	24.9	1026.2
Nontyped[2]	5.4	...	...	...	...	5.4
All types	2741.0	80.9	54.0	839.0	140.8	1626.2

[1] Forest type is based on species plurality of all live trees. Mixed types that in combination contain a majority of hardwood stocking are hardwood types.

[2] Timberland with no current stocking.

Table 8—*Area of timberland by ownership class and stocking classes of growing-stock trees, Southwest-South Alabama Counties, 1990*

Ownership class	All classes	Stocking class (percent)				
		> 130	100-130	60-100	16.7-60	< 16.7
	Thousand acres					
National forest	80.9	2.7	13.1	54.6	10.5	...
Other public	54.0	...	10.5	16.4	16.8	10.3
Forest industry	839.0	66.8	249.8	437.3	74.9	10.3
Forest industry-leased	140.8	6.2	23.8	98.4	6.2	6.2
Other private	1626.2	63.1	334.7	931.1	259.6	37.6
All ownerships	2741.0	138.9	631.9	1537.8	368.0	64.4

Table 9 – *Area of timberland by forest type and stand-size class, Southwest-South Alabama Counties, 1990*

Forest type[1]	All classes	Stand-size class Sawtimber	Poletimber	Sapling-seedling	Nonstocked[2] areas
	- - - - - - -	- - - - - - -	*Thousand acres*	- - - - - - -	- - - - - - -
Longleaf-slash pine	843.2	328.1	264.7	239.9	10.5
Loblolly-shortleaf pine	392.0	130.9	94.9	166.2	...
Softwood total	1235.2	459.0	359.7	406.1	10.5
Oak-pine	599.7	200.9	116.8	282.0	...
Oak-hickory	458.9	60.6	83.4	308.6	6.2
Oak-gum-cypress	441.8	209.0	143.3	89.6	...
Hardwood total	1500.4	470.6	343.4	680.2	6.2
Nontyped[3]	5.4	...	...	...	5.4
All types	2741.0	929.6	703.1	1086.2	22.1

[1] Forest type is based on species plurality of all live trees. Mixed types that in combination contain a majority of hardwood stocking are hardwood types.

[2] Timberland less than 16.7 percent stocked.

[3] Timberland with no current stocking.

Table 10 – *Number of live trees on timberland by species and diameter class, Southwest-South Alabama Counties, 1990*

Species	All classes	Diameter class (inches at breast height) 1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	*Thousand trees*	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
Longleaf-slash pines	305212	89344	91539	53871	31709	16109	10922	6593	3184	1343	422	176	...
Shortleaf-loblolly pines	148942	54067	45204	22658	14842	5776	2694	2113	756	495	223	106	9
Other yellow pines	1233	...	...	414	221	114	106	183	102	24	39	25	3
Cypress	9353	2439	2548	1343	953	651	543	307	276	115	27	142	9
Other softwoods	3303	1040	1040	540	208	156	177	115	...	11	10	5	...
Total softwoods	468043	146889	140331	78826	47932	22806	14442	9311	4318	1988	722	455	22
Select white oaks	7375	5721	471	329	261	233	89	101	95	52	9	14	...
Select red oaks	22	...	...	...	...	...	...	...	...	13	...	9	...
Other white oaks	50826	39257	6307	2298	1481	933	207	172	64	50	9	44	3
Other red oaks	258893	193555	35800	14567	6336	3017	2494	1193	855	399	229	354	93
Hickory	17150	9984	4130	1194	628	373	333	204	162	59	32	44	7
Hard maple	166	...	...	113	53	...	...	...	...	...	...	...	...
Soft maple	114848	86895	19010	5424	1721	1043	415	203	78	22	11	26	...
Beech	834	...	570	47	30	66	...	23	47	13	...	37	...
Sweetgum	88412	57188	21733	4460	2244	1235	562	418	245	94	110	115	10
Tupelo-blackgum	137243	74618	24881	17083	6937	5471	3155	1951	1466	855	376	443	6
Ash	7540	3928	1904	667	354	249	134	36	87	66	17	98	...
Cottonwood-aspen	1065	984	...	...	...	35	...	...	...	26	...	20	...
Basswood	582	570	...	...	...	...	...	...	...	12	...	...	...
Yellow-poplar	36048	25268	6131	1651	1055	449	465	324	295	122	145	124	19
Other hardwoods	317627	219766	57509	19312	10020	5562	2788	1517	534	297	155	159	8
Total hardwoods	1038631	717735	178446	67146	31120	18667	10642	6142	3929	2080	1093	1486	146
Noncommercial	139548	107755	18644	8702	2615	1240	292	140	73	10	28	22	27
All species	1646222	972379	337421	154674	81667	42714	25377	15593	8320	4078	1842	1963	195

Table 11 – *Number of growing-stock trees on timberland by species and diameter class, Southwest-South Alabama Counties, 1990*

		Diameter class (inches at breast height)											
Species	All classes	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees												
Longleaf-slash pines	279679	73807	84163	51703	31400	16068	10857	6573	3167	1343	422	176	...
Shortleaf-loblolly pines	137997	48020	41554	21745	14671	5650	2694	2094	756	484	212	106	9
Other yellow pines	1128	...	...	309	221	114	106	183	102	24	39	25	3
Cypress	9297	2439	2548	1343	953	608	543	307	276	115	27	134	4
Other softwoods	3191	1040	1040	427	208	156	177	115	...	11	10	5	...
Total softwoods	431291	125306	129304	75528	47453	22597	14378	9273	4301	1977	711	447	16
Select white oaks	6811	5201	471	329	261	233	57	101	95	40	9	14	...
Select red oaks	22	...	...	...	...	...	...	...	...	13	...	9	...
Other white oaks	23097	12981	5736	1888	1178	854	178	155	64	15	9	35	3
Other red oaks	216039	160014	30187	12859	5627	2618	2018	1041	734	378	196	309	60
Hickory	11152	5191	3087	1194	558	328	309	204	162	47	32	36	5
Hard maple	166	...	...	113	53	...	...	...	...	...	...	...	...
Soft maple	74386	54887	12662	4083	1358	852	322	117	64	11	11	20	...
Beech	762	...	570	47	30	66	...	...	31	...	...	17	...
Sweetgum	65617	41916	15154	3961	2039	1075	533	381	245	80	110	115	10
Tupelo-blackgum	87014	37446	18463	12672	6600	5306	2069	1523	1384	834	356	358	3
Ash	2864	1455	471	166	208	173	112	36	73	56	17	98	...
Cottonwood-aspen	573	492	...	...	...	35	...	...	...	26	...	20	...
Yellow-poplar	31482	22167	5088	1455	985	449	407	305	264	122	131	106	4
Other hardwoods	188424	120283	37093	14226	8242	4626	1869	1244	393	264	77	103	4
Total hardwoods	708409	462033	128981	52993	27140	16616	7874	5106	3510	1884	948	1238	88
All species	1139700	587339	258285	128521	74593	39213	22252	14379	7811	3860	1659	1685	104

Table 12 – *Volume of growing stock on timberland by species and diameter class, Southwest-South Alabama Counties, 1990*

		Diameter class (inches at breast height)									
Species	All classes	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet										
Longleaf-slash pines	1244.0	137.4	207.2	212.7	232.0	204.5	135.4	71.4	28.0	15.4	...
Shortleaf-loblolly pines	393.8	48.0	85.2	65.9	51.2	59.7	28.2	28.1	15.5	11.3	0.7
Other yellow pines	18.9	0.7	1.3	1.0	1.8	4.0	3.9	1.0	2.3	2.1	0.8
Cypress	69.9	2.8	6.7	8.0	11.3	8.2	10.2	6.1	2.0	13.8	0.7
Other softwoods	11.3	1.3	1.2	1.7	3.0	2.5	...	0.2	0.7	0.6	...
Total softwoods	1737.8	190.3	301.5	289.3	299.2	279.0	177.7	107.0	48.5	43.2	2.2
Select white oaks	14.3	1.0	1.7	2.3	0.9	2.5	3.0	1.4	0.5	0.9	...
Select red oaks	1.3	...	...	...	...	...	...	0.8	...	0.5	...
Other white oaks	27.6	3.9	4.9	7.0	2.2	3.5	2.0	0.5	0.4	2.5	0.7
Other red oaks	218.4	29.6	29.0	24.1	30.4	23.5	22.2	15.6	9.5	25.2	9.3
Hickory	33.4	2.7	3.3	2.5	5.3	5.3	5.7	2.4	2.1	3.6	0.5
Hard maple	0.4	0.2	0.2	...	...	...	...	...	...	...	...
Soft maple	38.7	11.1	8.5	8.2	4.7	2.5	1.4	0.5	0.5	1.2	...
Beech	3.7	0.2	0.2	0.6	...	...	0.9	...	...	1.8	...
Sweetgum	79.1	9.6	9.6	10.4	9.6	9.2	8.1	4.1	6.6	10.6	1.4
Tupelo-blackgum	306.8	33.3	38.0	55.3	33.2	34.1	40.6	32.7	16.7	22.7	0.1
Ash	20.9	0.7	1.5	1.8	2.3	0.9	2.8	2.5	0.8	7.7	...
Cottonwood-aspen	4.1	...	...	0.4	...	...	...	1.4	...	2.4	...
Yellow-poplar	61.2	3.8	5.7	4.7	6.9	8.0	9.2	5.3	7.3	10.1	0.3
Other hardwoods	231.8	36.9	48.1	48.8	32.0	30.8	13.2	11.3	3.3	6.9	0.4
Total hardwoods	1041.6	133.1	150.7	166.1	127.4	120.3	109.2	78.3	47.7	96.2	12.6
All species	2779.4	323.4	452.2	455.4	426.6	399.2	286.9	185.2	96.2	139.3	14.9

Table 13 – *Volume of growing stock in the saw-log portion of sawtimber[1] trees on timberland by species and diameter class, Southwest-South Alabama Counties, 1990*

Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Diameter class (inches at breast height)								
	Million cubic feet								
Longleaf-slash pines	796.9	166.7	205.2	189.4	127.0	67.7	26.3	14.6	...
Shortleaf-loblolly pines	230.4	51.4	45.2	54.8	26.3	26.5	14.6	11.0	0.6
Other yellow pines	15.4	0.8	1.5	3.6	3.6	1.0	2.2	1.9	0.8
Cypress	52.8	5.8	9.6	7.2	9.3	5.8	1.9	12.6	0.7
Other softwoods	7.5	1.2	2.6	2.2	...	0.2	0.7	0.6	...
Total softwoods	1103.0	225.9	264.1	257.2	166.2	101.1	45.8	40.7	2.1
Select white oaks	7.4	...	0.7	2.0	2.4	1.2	0.3	0.8	...
Select red oaks	1.2	...	...	...	...	0.7	...	0.5	...
Other white oaks	9.2	...	1.7	3.0	1.6	0.4	0.3	1.7	0.5
Other red oaks	112.8	...	22.7	19.1	18.9	13.4	8.4	22.2	8.2
Hickory	20.9	...	3.9	4.4	5.0	2.0	1.9	3.3	0.4
Soft maple	8.3	...	3.2	2.0	1.2	0.5	0.5	1.0	...
Beech	1.7	...	...	...	0.4	...	...	1.3	...
Sweetgum	41.8	...	6.6	7.2	7.1	3.6	6.1	10.0	1.3
Tupelo-blackgum	147.3	...	23.1	26.3	33.8	28.8	14.6	20.5	0.1
Ash	14.9	...	1.6	0.6	2.4	2.3	0.7	7.3	...
Cottonwood-aspen	3.4	...	...	...	...	1.3	...	2.1	...
Yellow-poplar	39.7	...	4.5	6.7	8.0	4.7	6.6	8.9	0.2
Other hardwoods	77.9	...	22.7	24.9	11.6	9.3	2.8	6.2	0.4
Total hardwoods	486.6	...	90.6	96.1	92.4	68.4	42.3	85.7	11.2
All species	1589.6	225.9	354.7	353.3	258.5	169.4	88.1	126.4	13.2

[1] That part of the bole of sawtimber trees between a 1-foot stump and saw-log top.

Table 14 – *Volume of sawtimber on timberland by species and diameter class, Southwest-South Alabama Counties, 1990*

Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Diameter class (inches at breast height)								
	Million board feet								
Longleaf-slash pines	4755.7	903.0	1209.2	1163.1	797.1	424.3	165.2	93.7	...
Shortleaf-loblolly pines	1340.1	264.3	258.7	325.1	155.1	168.1	92.6	72.8	3.4
Other yellow pines	86.2	3.9	8.0	19.3	21.1	5.4	12.2	11.4	5.0
Cypress	286.3	28.0	49.2	38.6	49.9	32.8	11.1	72.7	4.2
Other softwoods	39.3	6.0	14.4	11.2	...	0.6	4.3	2.9	...
Total softwoods	6507.5	1205.2	1539.5	1557.3	1023.2	631.1	285.4	253.4	12.5
Select white oaks	42.5	...	3.5	11.2	14.1	6.5	2.1	5.1	...
Select red oaks	6.9	...	...	...	...	4.0	...	2.9	...
Other white oaks	53.2	...	8.3	16.8	9.4	2.5	2.0	11.0	3.3
Other red oaks	643.4	...	119.9	105.3	106.9	78.1	48.5	135.6	49.2
Hickory	122.7	...	21.9	25.5	28.6	11.4	11.9	21.1	2.1
Soft maple	43.9	...	16.9	10.9	6.1	2.2	2.7	5.2	...
Beech	9.3	...	...	...	2.1	...	...	7.2	...
Sweetgum	241.3	...	35.7	40.9	38.8	23.1	35.9	60.4	6.5
Tupelo-blackgum	760.0	...	116.1	135.1	172.3	152.6	75.4	107.9	0.5
Ash	83.3	...	8.6	2.9	15.1	12.2	3.2	41.3	...
Cottonwood-aspen	22.3	...	...	...	...	8.1	...	14.1	...
Yellow-poplar	229.6	...	24.1	36.5	45.2	26.7	38.4	57.5	1.1
Other hardwoods	432.7	...	119.2	137.9	67.1	55.5	16.4	33.8	2.7
Total hardwoods	2691.0	...	474.1	523.2	505.8	383.1	236.4	502.9	65.5
All species	9198.6	1205.2	2013.6	2080.5	1529.0	1014.2	521.8	756.3	78.0

Table 15 – *Volume of growing stock and sawtimber on timberland by county and species group, Southwest-South Alabama Counties, 1990*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Baldwin	671.1	46.1	303.9	37.6	197.1	86.4	2257.8	50.6	1215.1	157.3	531.6	303.2
Covington	411.8	113.2	150.0	1.4	86.8	60.4	1211.3	262.7	641.1	6.2	195.4	105.8
Escambia	538.9	96.5	312.9	0.6	84.2	44.6	1939.1	116.0	1472.0	1.6	207.6	141.9
Mobile	416.1	17.1	216.6	29.2	129.2	24.0	1297.0	45.9	805.8	115.1	290.7	39.5
Washington	741.5	108.0	292.4	12.3	215.7	113.0	2493.4	350.8	1222.0	45.4	502.1	373.1
All counties	2779.4	380.9	1275.8	81.1	713.1	328.5	9198.6	825.9	5356.0	325.6	1727.4	963.7

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 16 – *Volume of timber on timberland by class of timber and species group, Southwest-South Alabama Counties, 1990*

		Softwood			Hardwood	
		Pine				
Class of timber	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet					
Sawtimber trees:						
Saw-log portion	1589.6	144.2	898.4	60.3	318.0	168.6
Upper-stem portion	248.1	21.6	112.6	8.8	70.8	34.3
Total	1837.7	165.9	1011.0	69.1	388.8	202.9
Poletimber trees	941.7	215.1	264.7	12.0	324.3	125.6
All growing-stock trees	2779.4	380.9	1275.8	81.1	713.1	328.5
Rough trees:						
Sawtimber size	74.7	0.2	3.8	0.5	42.7	27.4
Poletimber size	80.8	2.7	3.1	0.3	29.3	45.4
Total	155.5	2.9	7.0	0.8	72.0	72.8
Rotten trees:						
Sawtimber size	14.4	...	0.3	1.0	9.8	3.3
Poletimber size	2.1	...	...	...	1.1	1.0
Total	16.5	...	0.3	1.0	10.9	4.3
Salvable dead trees:						
Sawtimber size	5.2	1.4	2.1	...	1.6	0.2
Poletimber size	1.6	0.3	0.6	0.1	...	0.6
Total	6.8	1.6	2.7	0.1	1.6	0.8
All classes	2958.2	385.5	1285.7	82.9	797.6	406.4

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 17 – *Volume of live trees and growing stock on timberland by ownership class and species group, Southwest-South Alabama Counties, 1990*

	Live trees						Growing stock					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet											
National forest	116.8	4.2	85.1	1.4	9.5	16.6	110.2	4.2	85.0	1.4	8.4	11.2
Other public	31.0	...	19.0	0.4	6.4	5.1	29.8	...	18.7	0.4	6.0	4.7
Forest industry	996.6	208.5	358.6	25.5	300.6	103.4	941.8	206.7	357.6	24.8	265.3	87.5
Forest industry-leased	121.2	47.2	41.4	...	25.8	6.8	117.2	46.8	41.4	...	23.5	5.5
Other private	1685.8	124.0	779.0	55.5	453.6	273.7	1580.4	123.2	773.1	54.5	409.9	219.6
All ownerships	2951.4	383.8	1283.1	82.9	796.0	405.6	2779.4	380.9	1275.8	81.1	713.1	328.5

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 18 – *Average net annual growth of growing stock and sawtimber on timberland by county and species group, Southwest-South Alabama Counties, 1990*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Baldwin	30.4	6.0	14.0	0.7	6.0	3.8	100.5	5.5	63.5	3.4	18.9	9.2
Covington	24.3	8.2	8.2	...	4.8	3.2	77.0	16.6	35.5	...	12.6	12.3
Escambia	23.7	8.2	9.9	...	3.2	2.4	83.6	9.0	59.2	...	8.9	6.5
Mobile	20.2	2.8	9.9	0.9	4.4	2.2	71.7	3.4	45.3	4.8	12.8	5.4
Washington	38.4	7.3	13.5	0.4	11.0	6.1	131.5	21.7	60.8	1.5	28.2	19.3
All counties	137.0	32.4	55.4	2.0	29.4	17.7	464.2	56.2	264.3	9.7	81.4	52.7

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 19 – *Average annual removals of growing stock and sawtimber on timberland by county and species group, Southwest-South Alabama Counties, 1990*

	Growing stock						Sawtimber					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
County	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet						*Million board feet*					
Baldwin	25.9	5.0	17.1	...	1.8	1.9	74.5	2.5	64.8	...	4.1	3.0
Covington	21.2	1.5	15.8	...	2.3	1.7	87.2	5.7	73.1	...	2.5	6.0
Escambia	18.8	2.0	11.5	...	2.7	2.6	71.4	5.7	49.5	...	8.4	7.8
Mobile	10.4	3.4	4.9	...	0.5	1.7	27.8	6.6	15.0	...	2.0	4.2
Washington	24.5	4.4	11.3	0.2	4.7	4.0	87.4	11.2	50.1	0.7	13.3	12.0
All counties	100.8	16.2	60.5	0.2	12.0	11.9	348.2	31.7	252.5	0.7	30.2	33.1

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 20—*Average net annual growth and average annual removals of growing stock on timberland by species, Southwest-South Alabama Counties, 1990*

Species	Growth	Removals
	- - - - Million cubic feet	*- - - -*
Yellow pines	87.8	76.7
Other softwoods	2.0	0.2
Total softwoods	89.8	76.9
Select white-red oaks	1.1	0.9
Other white-red oaks	15.1	9.2
Hickory	1.0	0.4
Hard maple	...	...
Sweetgum	3.8	4.1
Ash-walnut-black cherry	0.1	0.6
Yellow-poplar	2.1	1.0
Other hardwoods	23.8	7.8
Total hardwoods	47.1	23.9
All species	137.0	100.8

Table 21—*Average net annual growth and average annual removals of sawtimber on timberland by species, Southwest-South Alabama Counties, 1990*

Species	Growth	Removals
	- - - - - Million board feet	*- - - - -*
Yellow pines	320.5	284.1
Other softwoods	9.7	0.7
Total softwoods	330.1	284.9
Select white-red oaks	3.6	3.1
Other white-red oaks	45.7	24.5
Hickory	3.9	1.7
Sweetgum	10.6	7.7
Ash-walnut-black cherry	-0.5	3.2
Yellow-poplar	8.2	3.5
Other hardwoods	62.7	19.7
Total hardwoods	134.1	63.4
All species	464.2	348.2

Table 22—*Average annual mortality of growing stock and sawtimber on timberland by species, Southwest-South Alabama Counties, 1990*

Species	Growing stock	Sawtimber
	- - -Million cubic feet - - -	*Million board feet - - -*
Yellow pines	7.6	23.3
Other softwoods	1.0	2.0
Total softwoods	8.7	25.3
Select white-red oaks	0.1	...
Other white-red oaks	2.1	4.2
Hickory	0.1	0.6
Sweetgum	0.3	...
Ash-walnut-black cherry	1.0	4.3
Yellow-poplar	1.1	1.9
Other hardwoods	4.3	9.6
Total hardwoods	9.0	20.7
All species	17.7	45.9

Table 23 – *Average net annual growth and average annual removals of growing stock on timberland by ownership class and species group, Southwest-South Alabama Counties, 1990*

	Growth						Removals					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million cubic feet											
National forest	2.6	0.3	1.6	...	0.2	0.4	3.1	0.6	2.4	...	...	0.1
Other public	1.5	0.3	0.6	...	0.3	0.4	1.1	0.6	0.5	...	...	...
Forest industry	48.5	17.7	15.9	0.4	10.6	3.9	37.1	8.3	20.9	...	3.3	4.6
Forest industry-leased	10.7	5.1	3.1	...	2.2	0.3	7.5	3.4	1.7	...	1.5	0.9
Other private	73.6	9.0	34.2	1.6	16.1	12.7	52.0	3.3	35.0	0.2	7.3	6.3
All ownerships	137.0	32.4	55.4	2.0	29.4	17.7	100.8	16.2	60.5	0.2	12.0	11.9

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 24 – *Average net annual growth and average annual removals of sawtimber on timberland by ownership class and species group, Southwest-South Alabama Counties, 1990*

	Growth						Removals					
		Softwood			Hardwood			Softwood			Hardwood	
		Pine						Pine				
Ownership class	All species	Planted	Natural	Other	Soft[1]	Hard[2]	All species	Planted	Natural	Other	Soft[1]	Hard[2]
	Million board feet											
National forest	11.2	1.2	8.8	...	0.1	1.1	14.7	2.9	11.5	...	...	0.3
Other public	4.4	1.2	1.0	...	0.7	1.4	3.2	1.2	2.0	...	...	...
Forest industry	153.2	24.0	77.1	2.9	38.4	10.8	125.3	13.4	89.5	...	7.5	14.8
Forest industry-leased	24.8	11.1	8.5	...	4.2	0.9	24.4	8.8	5.5	...	6.8	3.2
Other private	270.6	18.6	168.8	6.8	38.0	38.4	180.7	5.4	143.8	0.7	15.9	14.8
All ownerships	464.2	56.2	264.3	9.7	81.4	52.7	348.2	31.7	252.5	0.7	30.2	33.1

[1] Hardwood species with an average specific gravity of 0.50 or less such as gums, yellow-poplar, cottonwood, red maple, basswood, aspen, and willow.

[2] Hardwood species with an average specific gravity greater than 0.50 such as oaks, hard maple, hickories, and green and white ash.

Table 25 – *Volume of sawtimber on timberland by species and tree grade, Southwest-South Alabama Counties, 1990*

Species	All grades	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
	Million board feet					
Yellow pines	6181.9	2084.5	926.0	3075.2	...	96.1
Cypress	286.3	199.8	51.1	33.4	...	1.9
Other softwoods	39.3	19.4	4.3	10.5	...	5.1
Total softwoods	6507.5	2303.8	981.4	3119.2	...	103.2
Select white-red oaks	49.4	6.9	...	25.7	12.9	3.8
Other white-red oaks	696.6	33.1	67.9	145.9	374.8	74.8
Hickory	122.7	18.5	17.3	44.8	27.3	14.8
Sweetgum	241.3	55.4	48.2	63.7	56.3	17.6
Tupelo and blackgum	760.0	153.2	201.6	278.1	96.1	31.0
Ash-walnut-black cherry	85.0	25.4	35.2	15.8	4.2	4.4
Yellow-poplar	229.6	25.2	15.1	65.2	108.4	15.6
Other hardwoods	506.5	63.7	66.3	177.5	161.1	38.0
Total hardwoods	2691.0	381.4	451.7	816.7	841.2	200.1
All species	9198.6	2685.1	1433.0	3935.9	841.2	303.2

Supplemental Tables 26-43

Table 26 – *Area of timberland by stand age, forest type group and stand origin, Southwest-South Alabama Counties, 1990*

Stand age class	Pine		Oak-pine		Other hardwood types	
	Artificial	Natural	Artificial	Natural	Artificial	Natural
	- - - - - - - - - -	- - - - - - - - - -	- - - -*Thousand acres*	- - - - - - - - - -	- - - - - - - - - -	- - - - - - - - - -
1-10	143.5	37.2	21.3	18.1	27.6	18.7
11-20	151.7	10.7	16.2	5.3	...	10.7
21-30	62.0	27.0	5.1	5.4	...	...
31-40	13.9	21.6	...	...	...	...
41-50	5.4	27.2	...	...	...	...
>50	...	34.1	...	...	...	5.7
Mixed	105.1	595.8	6.2	522.0	13.7	824.2
Total	481.6	753.6	48.9	550.8	41.3	859.4

Table 27 – *Volume of softwood growing stock on timberland by county and forest type group, Southwest-South Alabama Counties, 1990*

		Forest type group						
		Longleaf-slash pine		Loblolly-shortleaf pine				
County	Total	Planted	Natural	Planted	Natural	Oak-pine	Oak-hickory	Oak-gum-cypress
	- - - - - - - -	- - - - - - - -	- - - - - - - -	- - - -*Million cubic feet*	- - - - - - - -	- - - - - - - -	- - - - - - - -	- - - - - - - -
Baldwin	387.6	31.5	146.2	11.6	49.7	76.2	18.0	54.4
Covington	264.5	43.8	67.9	69.1	17.0	51.7	8.2	6.8
Escambia	410.0	61.6	201.1	33.6	41.6	60.2	5.0	7.0
Mobile	262.9	9.2	97.7	5.2	19.5	86.7	14.2	30.3
Washington	412.8	85.2	90.9	18.6	57.9	99.6	30.6	29.8
All counties	1737.8	231.4	603.9	138.1	185.6	374.4	75.9	128.4

Table 28 – *Volume of hardwood growing stock on timberland by county and forest type group, Southwest-South Alabama Counties, 1990*

		Forest type group						
		Longleaf-slash pine		Loblolly-shortleaf pine				
County	Total	Planted	Natural	Planted	Natural	Oak-pine	Oak-hickory	Oak-gum-cypress
	- - - - - - - -	- - - - - - - -	- - - - - - - -	- - - -*Million cubic feet*	- - - - - - - -	- - - - - - - -	- - - - - - - -	- - - - - - - -
Baldwin	283.5	1.0	11.2	0.2	2.9	25.6	17.4	225.2
Covington	147.2	2.2	6.1	2.3	7.4	25.8	58.0	45.4
Escambia	128.9	2.0	16.6	1.7	3.6	29.2	19.6	56.1
Mobile	153.3	0.6	2.8	0.9	1.5	33.5	26.3	87.7
Washington	328.8	4.2	13.4	8.2	6.4	60.8	74.3	161.5
All counties	1041.6	10.0	50.1	13.3	21.7	174.9	195.7	575.9

Table 29 – *Volume of softwood growing stock in the saw-log portion of sawtimber trees on timberland by forest type group, Southwest-South Alabama Counties, 1990*

County	Total	Longleaf-slash pine Planted	Longleaf-slash pine Natural	Loblolly-shortleaf pine Planted	Loblolly-shortleaf pine Natural	Oak-pine	Oak-hickory	Oak-gum-cypress
	Million cubic feet							
Baldwin	244.8	4.9	88.3	4.7	33.8	54.7	14.4	44.1
Covington	156.4	20.9	52.7	24.7	9.9	38.1	5.0	5.0
Escambia	262.0	13.9	150.6	6.3	32.6	49.6	4.8	4.1
Mobile	165.1	2.5	51.1	3.3	14.2	62.7	8.5	22.8
Washington	274.6	44.7	54.6	13.6	40.3	73.9	24.0	23.6
All counties	1103.0	87.0	397.3	52.6	130.7	279.1	56.8	99.6

Table 30 – *Volume of hardwood growing stock in the saw-log portion of sawtimber trees on timberland by forest type group, Southwest-South Alabama Counties, 1990*

County	Total	Longleaf-slash pine Planted	Longleaf-slash pine Natural	Loblolly-shortleaf pine Planted	Loblolly-shortleaf pine Natural	Oak-pine	Oak-hickory	Oak-gum-cypress
	Million cubic feet							
Baldwin	154.6	0.4	3.4	...	1.5	10.4	6.9	132.0
Covington	54.6	0.7	1.9	1.0	2.3	6.2	24.0	18.4
Escambia	61.2	0.7	8.6	...	1.2	14.9	8.6	27.2
Mobile	63.1	...	...	0.3	...	12.1	7.0	43.8
Washington	153.0	1.0	1.8	5.3	2.1	18.3	41.7	82.7
All counties	486.6	2.9	15.8	6.6	7.1	61.8	88.2	304.1

Table 31 – *Volume of timber on timberland by county, class of timber and species group, Southwest-South Alabama Counties, 1990*

County	All classes	Growing stock Softwood	Growing stock Hardwood	Rough Softwood	Rough Hardwood	Rotten Softwood	Rotten Hardwood
	Million cubic feet						
Baldwin	731.6	387.6	283.5	2.4	52.2	0.5	5.4
Covington	431.4	264.5	147.2	0.8	18.4	...	0.4
Escambia	555.6	410.0	128.9	3.4	10.7	...	2.7
Mobile	448.3	262.9	153.3	0.4	29.4	...	2.4
Washington	784.5	412.8	328.8	3.7	34.2	0.8	4.3
All counties	2951.4	1737.8	1041.6	10.7	144.8	1.3	15.2

Table 32—*Number of live trees on timberland by detailed species and diameter class, Southwest-South Alabama Counties, 1990*

Species	All classes	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
		Diameter class (inches at breast height)											
	Thousand trees												
Longleaf pine	122771	43430	31795	15005	11828	7876	6607	3688	1637	666	202	38	...
Slash pine	182440	45914	59745	38866	19881	8233	4314	2906	1547	677	220	138	...
Shortleaf pine	7527	1140	2722	1748	494	565	403	325	110	...	19	...	...
Loblolly pine	141415	52927	42481	20910	14348	5211	2291	1788	646	495	203	106	9
Spruce pine	888	...	...	204	119	82	106	183	102	24	39	25	3
Pitch pine	344	...	...	210	103	32	...	...	...	...	...	...	...
Redcedar	2341	1040	1040	261	...	...	...	...	...	...	...	...	...
Hemlock-spruce	962	...	...	279	208	156	177	115	...	11	10	5	...
Cypress	9353	2439	2548	1343	953	651	543	307	276	115	27	142	9
Total softwoods	468043	146889	140331	78826	47932	22806	14442	9311	4318	1988	722	455	22
Select white oaks	7375	5721	471	329	261	233	89	101	95	52	9	14	...
Select red oaks	22	...	...	...	...	...	...	...	...	13	...	9	...
Other white oaks	50826	39257	6307	2298	1481	933	207	172	64	50	9	44	3
Other red oaks	258893	193555	35800	14567	6336	3017	2494	1193	855	399	229	354	93
Sweet pecan	620	471	...	...	34	87	...	16	...	...	...	5	7
Water hickory	2624	1041	570	542	218	...	78	42	74	34	10	17	...
Other hickories	13905	8473	3560	652	376	286	255	147	89	26	22	22	...
Persimmon	15706	13986	1511	109	68	33	...	...	...	...	...	...	...
Hard maple	166	...	...	113	53	...	...	...	...	...	...	...	...
Soft maple	114848	86895	19010	5424	1721	1043	415	203	78	22	11	26	...
Beech	834	...	570	47	30	66	...	23	47	13	...	37	...
Sweetgum	88412	57188	21733	4460	2244	1235	562	418	245	94	110	115	10
Blackgum	90486	57398	14090	10266	3575	2399	1368	700	381	143	83	78	3
Other gums/tupelos	46757	17220	10791	6817	3362	3071	1787	1251	1085	712	293	365	3
Other ashes	7540	3928	1904	667	354	249	134	36	87	66	17	98	...
Sycamore	343	...	...	89	55	115	26	18	32	...	...	8	...
Cottonwood	1065	984	...	...	...	35	...	...	...	26	...	20	...
Basswood	582	570	...	...	...	...	...	...	...	12	...	...	...
Yellow-poplar	36048	25268	6131	1651	1055	449	465	324	295	122	145	124	19
Magnolia	4817	3171	1090	122	156	177	59	23	14	...	...	5	...
Sweetbay	135930	85006	23845	11586	7343	4056	2209	1123	346	185	107	117	8
Willow	860	520	...	261	...	79	...	...	...	...	...	...	...
Black cherry	11464	9938	963	392	111	51	...	...	...	...	10	...	...
American elm	1679	...	1046	290	126	40	44	73	40	11	9	...	...
Other elms	5141	3294	1041	324	187	87	48	57	61	25	9	9	...
Hackberry	3281	1062	...	581	439	496	347	214	41	63	19	19	...
Sassafras	2439	1582	570	287	...	...	...	...	...	...	...	...	...
Dogwood	87081	63817	18339	3715	993	159	57	...	...	...	...	...	...
Holly	35761	27048	6981	1307	200	225	...	...	...	...	...	...	...
Other commercial	13126	10341	2124	252	342	45	...	9	...	12	...	...	...
Total hardwoods	1038631	717735	178446	67146	31120	18667	10642	6142	3929	2080	1093	1486	146
Noncommercial	139548	107755	18644	8702	2615	1240	292	140	73	10	28	22	27
All species	1646222	972379	337421	154674	81667	42714	25377	15593	8320	4078	1842	1963	195

Table 33 – *Number of growing-stock trees on timberland by detailed species and diameter class, Southwest-South Alabama Counties, 1990*

		Diameter class (inches at breast height)									
Species	All classes	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Thousand trees										
Longleaf pine	46791	14298	11828	7876	6575	3688	1620	666	202	38	...
Slash pine	74918	37405	19572	8193	4282	2886	1547	677	220	138	...
Shortleaf pine	3665	1748	494	565	403	325	110	...	19	...	...
Loblolly pine	44758	19998	14177	5085	2291	1770	646	484	193	106	9
Spruce pine	888	204	119	82	106	183	102	24	39	25	3
Pitch pine	239	105	103	32	...	...	...	...	...	...	...
Redcedar	261	261	...	...	...	...	...	...	...	...	...
Hemlock-spruce	849	166	208	156	177	115	...	11	10	5	...
Cypress	4311	1343	953	608	543	307	276	115	27	134	4
Total softwoods	176681	75528	47453	22597	14378	9273	4301	1977	711	447	16
Select white oaks	1139	329	261	233	57	101	95	40	9	14	...
Select red oaks	22	...	...	...	...	...	...	13	...	9	...
Other white oaks	4380	1888	1178	854	178	155	64	15	9	35	3
Other red oaks	25839	12859	5627	2618	2018	1041	734	378	196	309	60
Sweet pecan	147	...	34	87	...	16	...	...	...	5	5
Water hickory	1014	542	218	...	78	42	74	34	10	17	...
Other hickories	1713	652	306	240	230	147	89	13	22	14	...
Persimmon	101	...	68	33	...	...	...	...	...	...	...
Hard maple	166	113	53	...	...	...	...	...	...	...	...
Soft maple	6838	4083	1358	852	322	117	64	11	11	20	...
Beech	192	47	30	66	...	...	31	...	...	17	...
Sweetgum	8548	3961	2039	1075	533	381	245	80	110	115	10
Blackgum	14940	6970	3431	2320	1079	554	340	122	73	50	...
Other gums/tupelos	16165	5701	3169	2986	990	969	1044	712	283	308	3
Other ashes	939	166	208	173	112	36	73	56	17	98	...
Sycamore	211	...	55	72	26	18	32	...	...	8	...
Cottonwood	81	...	...	35	...	...	...	26	...	20	...
Yellow-poplar	4227	1455	985	449	407	305	264	122	131	106	4
Magnolia	421	122	80	177	...	23	14	...	...	5	...
Sweetbay	22546	9831	6373	3443	1538	849	233	153	49	74	4
Willow	168	126	...	43	...	...	...	...	...	...	...
Black cherry	377	206	111	51	...	...	...	...	10	...	...
American elm	611	290	126	40	22	73	40	11	9	...	...
Other elms	551	104	187	87	48	57	33	25	...	9	...
Hackberry	2043	581	439	453	237	214	41	63	9	6	...
Sassafras	287	287	...	...	...	...	...	...	...	...	...
Dogwood	1876	1490	386	...	...	...	...	...	...	...	...
Holly	1433	1050	200	183	...	...	...	...	...	...	...
Other commercial	423	139	217	45	...	9	...	12	...	...	...
Total hardwoods	117395	52993	27140	16616	7874	5106	3510	1884	948	1238	88
All species	294076	128521	74593	39213	22252	14379	7811	3860	1659	1685	104

Table 34 – *Volume of growing stock on timberland by detailed species and diameter class, Southwest- South Alabama Counties, 1990*

Species	All classes	Diameter class (inches at breast height) 5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet										
Longleaf pine	617.1	43.7	85.2	109.8	142.3	115.9	68.6	35.0	13.3	3.3	...
Slash pine	626.9	93.7	121.9	102.9	89.7	88.6	66.8	36.5	14.7	12.1	...
Shortleaf pine	42.0	4.3	3.8	7.5	9.2	11.4	4.6	...	1.3	...	...
Loblolly pine	351.8	43.7	81.4	58.4	42.0	48.3	23.7	28.1	14.2	11.3	0.7
Spruce pine	17.9	0.5	0.8	0.7	1.8	4.0	3.9	1.0	2.3	2.1	0.8
Pitch pine	1.0	0.2	0.5	0.3	...	...	...	...	...	...	...
Redcedar	0.6	0.6	...	...	...	...	...	...	...	...	...
Hemlock-spruce	10.6	0.7	1.2	1.7	3.0	2.5	...	0.2	0.7	0.6	...
Cypress	69.9	2.8	6.7	8.0	11.3	8.2	10.2	6.1	2.0	13.8	0.7
Total softwoods	1737.8	190.3	301.5	289.3	299.2	279.0	177.7	107.0	48.5	43.2	2.2
Select white oaks	14.3	1.0	1.7	2.3	0.9	2.5	3.0	1.4	0.5	0.9	...
Select red oaks	1.3	...	...	...	...	...	...	0.8	...	0.5	...
Other white oaks	27.6	3.9	4.9	7.0	2.2	3.5	2.0	0.5	0.4	2.5	0.7
Other red oaks	218.4	29.6	29.0	24.1	30.4	23.5	22.2	15.6	9.5	25.2	9.3
Sweet pecan	2.0	...	0.2	0.8	...	0.3	...	...	...	0.3	0.5
Water hickory	13.7	1.6	1.6	...	1.6	1.4	3.2	1.9	0.6	1.9	...
Other hickories	17.6	1.1	1.6	1.7	3.7	3.6	2.6	0.4	1.6	1.4	...
Persimmon	0.6	...	0.2	0.3	...	...	...	...	...	...	...
Hard maple	0.4	0.2	0.2	...	...	...	...	...	...	...	...
Soft maple	38.7	11.1	8.5	8.2	4.7	2.5	1.4	0.5	0.5	1.2	...
Beech	3.7	0.2	0.2	0.6	...	...	0.9	...	...	1.8	...
Sweetgum	79.1	9.6	9.6	10.4	9.6	9.2	8.1	4.1	6.6	10.6	1.4
Blackgum	108.0	17.2	19.4	22.8	16.6	11.7	9.7	4.1	3.2	3.3	...
Other gums/tupelos	198.8	16.1	18.6	32.5	16.6	22.4	30.9	28.6	13.6	19.4	0.1
Other ashes	20.9	0.7	1.5	1.8	2.3	0.9	2.8	2.5	0.8	7.7	...
Sycamore	5.1	...	0.4	1.4	0.5	0.5	1.6	...	...	0.6	...
Cottonwood	4.1	...	...	0.4	...	...	...	1.4	...	2.4	...
Yellow-poplar	61.2	3.8	5.7	4.7	6.9	8.0	9.2	5.3	7.3	10.1	0.3
Magnolia	3.5	0.2	0.4	1.4	...	0.6	0.5	...	...	0.4	...
Sweetbay	170.8	27.7	38.4	36.8	25.9	21.0	7.4	6.3	2.1	4.9	0.4
Willow	0.5	0.2	...	0.3	...	...	...	...	...	...	...
Black cherry	1.8	0.5	0.6	0.4	...	...	...	...	0.4	...	...
American elm	6.1	1.0	0.7	0.3	0.3	1.9	1.2	0.3	0.4	...	...
Other elms	8.3	0.4	1.4	1.2	0.9	1.4	1.0	1.3	...	0.7	...
Hackberry	24.2	1.5	2.9	5.0	4.4	5.2	1.6	2.9	0.5	0.4	...
Sassafras	0.5	0.5	...	...	...	...	...	...	...	...	...
Dogwood	3.1	2.1	1.0	...	...	...	...	...	...	...	...
Holly	4.4	2.2	0.9	1.3	...	...	...	...	...	...	...
Other commercial	2.8	0.5	1.2	0.4	...	0.2	...	0.4	...	...	...
Total hardwoods	1041.6	133.1	150.7	166.1	127.4	120.3	109.2	78.3	47.7	96.2	12.6
All species	2779.4	323.4	452.2	455.4	426.6	399.2	286.9	185.2	96.2	139.3	14.9

Table 35 – *Volume of growing stock in the saw-log portion of sawtimber trees on timberland by detailed species and diameter class, Southwest-South Alabama Counties, 1990*

Species	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million cubic feet								
Longleaf pine	432.7	88.3	125.6	106.9	63.8	32.8	12.2	3.0	...
Slash pine	364.1	78.4	79.6	82.5	63.2	34.9	14.1	11.6	...
Shortleaf pine	29.1	5.9	7.9	10.3	3.9	...	1.0	...	...
Loblolly pine	201.3	45.5	37.3	44.5	22.3	26.5	13.6	11.0	0.6
Spruce pine	15.2	0.6	1.5	3.6	3.6	1.0	2.2	1.9	0.8
Pitch pine	0.2	0.2	...	...	...	...	...	...	...
Hemlock-spruce	7.5	1.2	2.6	2.2	...	0.2	0.7	0.6	...
Cypress	52.8	5.8	9.6	7.2	9.3	5.8	1.9	12.6	0.7
Total softwoods	1103.0	225.9	264.1	257.2	166.2	101.1	45.8	40.7	2.1
Select white oaks	7.4	...	0.7	2.0	2.4	1.2	0.3	0.8	...
Select red oaks	1.2	...	...	...	...	0.7	...	0.5	...
Other white oaks	9.2	...	1.7	3.0	1.6	0.4	0.3	1.7	0.5
Other red oaks	112.8	...	22.7	19.1	18.9	13.4	8.4	22.2	8.2
Sweet pecan	1.0	...	...	0.3	...	...	...	0.2	0.4
Water hickory	9.0	...	1.2	1.2	2.7	1.6	0.5	1.7	...
Other hickories	10.9	...	2.7	2.8	2.2	0.4	1.4	1.4	...
Soft maple	8.3	...	3.2	2.0	1.2	0.5	0.5	1.0	...
Beech	1.7	...	...	...	0.4	...	...	1.3	...
Sweetgum	41.8	...	6.6	7.2	7.1	3.6	6.1	10.0	1.3
Blackgum	38.3	...	11.3	9.5	8.2	3.5	2.7	2.9	...
Other gums/tupelos	109.0	...	11.7	16.8	25.6	25.3	11.9	17.6	0.1
Other ashes	14.9	...	1.6	0.6	2.4	2.3	0.7	7.3	...
Sycamore	2.8	...	0.4	0.4	1.4	...	...	0.6	...
Cottonwood	3.4	...	...	...	...	1.3	...	2.1	...
Yellow-poplar	39.7	...	4.5	6.7	8.0	4.7	6.6	8.9	0.2
Magnolia	1.2	...	...	0.4	0.5	...	...	0.4	...
Sweetbay	53.8	...	18.3	17.5	6.5	5.1	1.8	4.2	0.4
Black cherry	0.3	...	...	...	...	...	0.3	...	...
American elm	3.2	...	0.2	1.4	1.0	0.2	0.4	...	...
Other elms	4.4	...	0.6	1.2	0.8	1.1	...	0.7	...
Hackberry	11.5	...	3.0	3.9	1.4	2.5	0.4	0.4	...
Other commercial	0.6	...	...	0.2	...	0.4	...	...	...
Total hardwoods	486.6	...	90.6	96.1	92.4	68.4	42.3	85.7	11.2
All species	1589.6	225.9	354.7	353.3	258.5	169.4	88.1	126.4	13.2

Table 36 — *Volume of timber on timberland by species and class of timber, Southwest-South Alabama Counties, 1990*

Species	All live	Growing stock	Rough	Rotten
	Million cubic feet			
Longleaf pine	619.1	617.1	2.0	...
Slash pine	631.9	626.9	5.0	...
Shortleaf pine	42.0	42.0	...	...
Loblolly pine	355.0	351.8	2.8	0.3
Spruce pine	17.9	17.9	...	...
Pitch pine	1.0	1.0	0.1	...
Redcedar	0.6	0.6	...	...
Hemlock-spruce	10.9	10.6	0.3	...
Cypress	71.3	69.9	0.5	1.0
Total softwoods	1749.8	1737.8	10.7	1.3
Select white oaks	14.9	14.3	0.6	...
Select red oaks	1.3	1.3	...	...
Other white oaks	30.1	27.6	2.3	0.2
Other red oaks	238.3	218.4	16.1	3.9
Sweet pecan	2.1	2.0	0.1	...
Water hickory	13.7	13.7	...	...
Other hickories	19.0	17.6	1.4	...
Persimmon	0.8	0.6	0.2	...
Hard maple	0.4	0.4	...	...
Soft maple	45.4	38.7	5.8	1.0
Beech	5.9	3.7	2.2	...
Sweetgum	83.2	79.1	3.9	0.3
Blackgum	121.2	108.0	12.0	1.2
Other gums/tupelos	218.4	198.8	17.4	2.2
Other ashes	23.2	20.9	2.1	0.2
Sycamore	5.8	5.1	0.8	...
Cottonwood	4.1	4.1	...	...
Basswood	0.2	...	0.2	...
Yellow-poplar	66.3	61.2	3.5	1.6
Magnolia	4.4	3.5	0.9	...
Sweetbay	198.4	170.8	23.5	4.1
Willow	0.8	0.5	0.3	...
Black cherry	2.4	1.8	0.6	...
American elm	6.3	6.1	0.3	...
Other elms	8.8	8.3	0.4	...
Hackberry	26.7	24.2	1.9	0.5
Sassafras	0.5	0.5	...	...
Dogwood	7.6	3.1	4.4	0.1
Holly	5.1	4.4	0.6	...
Other commercial	3.4	2.8	0.6	...
Total hardwoods	1158.9	1041.6	102.1	15.2
Noncommercial	42.8	...	42.8	...
All species	2951.4	2779.4	155.5	16.5

Table 37 – *Volume of sawtimber for tree grade 1 on timberland by detailed species and diameter class, Southwest-South Alabama Counties, 1990*

Species	All classes	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Diameter class (inches at breast height)								
	Million board feet								
Longleaf pine	495.6	79.9	144.7	145.4	65.6	39.1	12.4	8.6	...
Slash pine	1132.0	154.6	236.6	294.8	223.6	119.0	61.7	41.6	...
Shortleaf pine	92.1	12.4	24.5	38.8	16.4	...	...	...	...
Loblolly pine	361.7	27.2	43.9	83.4	31.3	82.1	43.8	50.0	...
Spruce pine	3.2	...	...	...	...	...	3.2	...	...
Hemlock-spruce	19.4	6.0	5.2	5.3	...	...	...	2.9	...
Cypress	199.8	17.9	32.3	20.0	31.1	23.4	11.1	59.8	4.2
Total softwoods	2303.8	298.0	487.2	587.6	368.1	263.6	132.1	162.9	4.2
Select red oaks	6.9	...	...	...	...	4.0	...	2.9	...
Other white oaks	5.5	...	...	...	...	...	...	2.2	3.3
Other red oaks	27.6	...	...	...	2.5	...	...	13.4	11.7
Water hickory	8.2	...	...	...	...	3.2	...	5.0	...
Other hickories	10.2	...	...	...	...	...	5.4	4.9	...
Soft maple	2.7	...	...	...	...	...	2.7	...	...
Sweetgum	55.4	...	...	...	5.3	8.9	8.1	28.2	5.0
Blackgum	25.2	...	...	...	2.0	6.5	9.8	6.9	...
Other gums/tupelos	127.9	...	...	...	21.2	46.1	30.4	30.2	...
Other ashes	25.4	...	...	...	2.5	2.6	...	20.3	...
Sycamore	3.0	...	...	...	...	...	...	3.0	...
Cottonwood	22.3	...	...	...	...	8.1	...	14.1	...
Yellow-poplar	25.2	...	...	...	...	3.9	2.9	18.3	...
Sweetbay	27.9	...	...	...	8.0	6.2	4.3	9.4	...
Other elms	7.8	...	...	...	...	3.8	...	4.0	...
Total hardwoods	381.4	...	...	...	41.5	93.5	63.6	162.8	20.0
All species	2685.1	298.0	487.2	587.6	409.6	357.2	195.7	325.7	24.1

Table 38 – *Volume of sawtimber for tree grade 2 on timberland by detailed species and diameter class, Southwest-South Alabama Counties, 1990*

Species	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Longleaf pine	433.2	56.8	106.8	138.1	83.9	26.8	18.5	2.3	...
Slash pine	311.7	52.7	65.9	80.4	70.3	24.0	9.3	9.3	...
Shortleaf pine	28.6	7.5	5.6	12.4	...	...	3.2	...	...
Loblolly pine	141.2	25.4	21.8	39.0	18.6	15.2	21.2	...	...
Spruce pine	10.3	...	...	...	...	...	4.8	5.5	...
Pitch pine	1.0	1.0	...	...	...	...	...	...	...
Hemlock-spruce	4.3	...	...	...	...	...	4.3	...	...
Cypress	51.1	3.6	11.4	12.6	12.4	2.5	...	8.5	...
Total softwoods	981.4	147.0	211.4	282.4	185.2	68.5	61.2	25.6	...
Other red oaks	67.9	...	...	4.9	1.9	11.8	3.8	33.2	12.3
Water hickory	15.0	...	...	...	11.3	...	...	3.8	...
Other hickories	2.3	...	...	2.3	...	...	...	...	...
Soft maple	2.6	...	...	2.6	...	...	...	...	...
Sweetgum	48.2	...	...	19.9	7.8	4.7	7.4	8.3	...
Blackgum	24.9	...	...	13.7	7.3	3.9	...	...	...
Other gums/tupelos	176.8	...	...	37.3	46.8	42.0	17.5	33.2	...
Other ashes	35.2	...	...	1.5	11.5	9.6	3.2	9.3	...
Yellow-poplar	15.1	...	...	...	3.9	3.0	...	8.2	...
Sweetbay	39.4	...	...	29.5	5.8	4.0	...	...	...
American elm	9.9	...	...	2.4	3.7	1.5	2.4	...	...
Other elms	6.9	...	...	4.3	2.7	...	...	...	...
Hackberry	7.4	...	...	2.8	4.6	...	...	...	...
Total hardwoods	451.7	...	...	121.1	107.4	80.6	34.3	96.0	12.3
All species	1433.0	147.0	211.4	403.5	292.6	149.1	95.5	121.7	12.3

Table 39—*Volume of sawtimber for tree grade 3 on timberland by detailed species and diameter class, Southwest-South Alabama Counties, 1990*

Species	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Longleaf pine	1636.6	349.4	488.1	370.9	249.1	131.1	42.9	5.0	...
Slash pine	667.4	201.1	160.5	119.2	89.5	69.1	14.9	13.2	...
Shortleaf pine	55.2	11.9	16.8	14.3	8.5	...	3.7	...	...
Loblolly pine	648.4	178.9	144.7	131.4	77.4	70.7	20.8	22.8	1.8
Spruce pine	67.6	2.9	6.5	19.3	18.4	5.4	4.2	5.8	5.0
Hemlock-spruce	10.5	...	4.0	5.9	...	0.6	...	...	...
Cypress	33.4	6.4	5.4	5.9	6.3	6.9	...	2.4	...
Total softwoods	3119.2	750.7	826.1	667.0	449.2	283.8	86.5	49.2	6.8
Select white oaks	25.7	...	...	5.6	11.3	3.1	2.1	3.7	...
Other white oaks	21.0	...	3.8	10.9	2.0	...	2.0	2.3	...
Other red oaks	124.9	...	27.0	19.8	18.5	24.5	9.8	25.5	...
Water hickory	24.7	...	7.4	7.4	2.3	4.2	...	3.5	...
Other hickories	20.1	...	7.0	7.0	2.7	...	3.4	...	...
Soft maple	17.8	...	11.7	0.6	1.6	2.2	...	1.6	...
Beech	1.8	...	...	...	...	...	...	1.8	...
Sweetgum	63.7	...	15.3	15.1	10.6	...	10.9	11.7	...
Blackgum	89.5	...	41.3	18.3	23.9	...	...	6.0	...
Other gums/tupelos	188.6	...	44.2	40.6	42.0	37.3	8.2	16.4	...
Other ashes	15.8	...	8.6	1.4	1.1	...	...	4.6	...
Sycamore	13.5	...	2.2	2.5	8.8	...	...	...	...
Yellow-poplar	65.2	...	13.4	11.7	16.8	6.8	3.1	13.4	...
Magnolia	2.6	...	...	2.6	...	...	...	...	...
Sweetbay	95.3	...	54.7	21.2	4.8	7.5	...	4.4	2.7
American elm	6.9	...	1.2	3.4	2.4	...	...	...	...
Other elms	6.8	...	3.6	...	...	3.2	...	...	...
Hackberry	32.8	...	8.1	10.9	3.6	7.8	2.4	...	...
Total hardwoods	816.7	...	249.3	179.0	152.3	96.5	42.0	94.9	2.7
All species	3935.9	750.7	1075.5	846.0	601.5	380.3	128.4	144.1	9.5

Table 40 – *Volume of sawtimber for tree grade 4 on timberland by detailed species and diameter class, Southwest-South Alabama Counties, 1990*

Species	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 & larger
	Million board feet								
Select white oaks	12.9	...	3.5	5.6	1.6	2.3	...	...	...
Other white oaks	19.8	...	1.4	4.5	7.4	...	...	6.5	...
Other red oaks	355.0	...	80.7	74.9	73.5	31.4	30.4	51.3	12.8
Sweet pecan	1.7	...	...	1.7	...	...	...	...	...
Other hickories	25.6	...	7.6	7.2	8.8	2.0	...	...	...
Soft maple	12.9	...	1.5	6.5	3.3	...	...	1.7	...
Beech	7.1	...	...	...	1.8	...	...	5.4	...
Sweetgum	56.3	...	19.9	5.9	9.0	9.4	2.8	9.3	...
Blackgum	57.8	...	14.2	15.9	7.5	9.7	7.1	3.3	...
Other gums/tupelos	38.4	...	8.0	3.9	13.4	4.3	...	8.7	...
Other ashes	4.2	...	...	...	...	...	...	4.2	...
Yellow-poplar	108.4	...	9.6	24.9	21.6	13.0	27.2	12.2	...
Magnolia	2.4	...	...	...	2.4	...	...	...	...
Sweetbay	113.5	...	35.9	42.2	16.7	9.9	3.8	5.1	...
Other elms	4.6	...	...	2.4	2.2	...	...	...	...
Hackberry	18.2	...	8.5	3.0	...	6.6	...	...	...
Other commercial	2.4	...	...	...	...	2.4	...	...	...
Total hardwoods	841.2	...	190.6	198.6	169.3	91.0	71.3	107.6	12.8
All species	841.2	...	190.6	198.6	169.3	91.0	71.3	107.6	12.8

Table 41 – *Volume of sawtimber on timberland by species and ownership class, Southwest-South Alabama Counties, 1990*

Species	All ownerships	National forest	Other public	Forest industry	Forest industry-leased	Other private
	Million board feet					
Yellow pines	6181.9	431.3	64.8	1990.9	191.1	3503.8
Cypress	286.3	6.2	1.9	75.2	...	202.9
Other softwoods	39.3	...	...	24.5	...	14.8
Total softwoods	6507.5	437.5	66.7	2090.7	191.1	3721.5
Select white-red oaks	49.4	...	...	10.3	...	39.1
Other white-red oaks	696.6	14.2	6.5	235.7	8.4	431.8
Hickory	122.7	1.3	...	25.2	4.2	92.0
Sweetgum	241.3	...	1.7	84.8	7.5	147.3
Tupelo and blackgum	760.0	15.8	4.6	357.6	20.0	362.0
Ash-walnut-black cherry	85.0	...	6.3	52.8	1.7	24.2
Yellow-poplar	229.6	2.4	...	54.5	...	172.7
Other hardwoods	506.5	2.1	12.4	217.5	17.3	257.1
Total hardwoods	2691.0	35.9	31.6	1038.5	59.0	1526.1
All species	9198.6	473.3	98.3	3129.2	250.2	5247.6

Table 42 – *Average net annual growth, average annual removals, and average annual mortality of live trees*[1] *by county and species group, Southwest-South Alabama Counties, 1990*

County	Growth			Removals			Mortality		
	All species	Softwood	Hardwood	All species	Softwood	Hardwood	All species	Softwood	Hardwood
	Million cubic feet								
Baldwin	32.0	20.7	11.3	26.2	22.2	4.0	8.7	2.9	5.9
Covington	22.4	15.2	7.1	21.4	17.2	4.1	2.7	1.1	1.7
Escambia	23.9	18.4	5.4	18.9	13.5	5.5	3.3	1.8	1.6
Mobile	19.5	13.4	6.1	10.6	8.3	2.3	5.2	1.5	3.7
Washington	38.0	21.3	16.7	25.1	15.8	9.3	6.6	2.9	3.8
All counties	135.7	89.0	46.7	102.1	76.9	25.2	26.6	10.0	16.6

[1] Excludes trees less than 5.0 inches in diameter at breast height.

Table 43 – *Average net annual growth, average annual removals, and average annual mortality of live trees*[1] *by ownership class and species group, Southwest-South Alabama Counties, 1990*

Ownership class	Growth			Removals			Mortality		
	All classes	Softwood	Hardwood	All species	Softwood	Hardwood	All Species	Softwood	Hardwood
	Million cubic feet								
National forest	2.9	1.7	1.2	3.1	3.0	0.1	0.7	0.4	0.3
Other public	1.4	0.9	0.5	1.3	1.1	0.2	0.3	0.1	0.2
Forest industry	48.1	33.8	14.3	37.1	29.2	7.9	7.1	2.5	4.6
Forest industry-leased	10.9	8.2	2.7	7.7	5.1	2.6	0.8	0.4	0.4
Other private	72.3	44.4	27.9	52.8	38.5	14.3	17.8	6.7	11.1
All ownerships	135.7	89.0	46.7	102.1	76.9	25.2	26.6	10.0	16.6

[1] Excludes trees less than 5.0 inches in diameter at breast height.

FIGURES

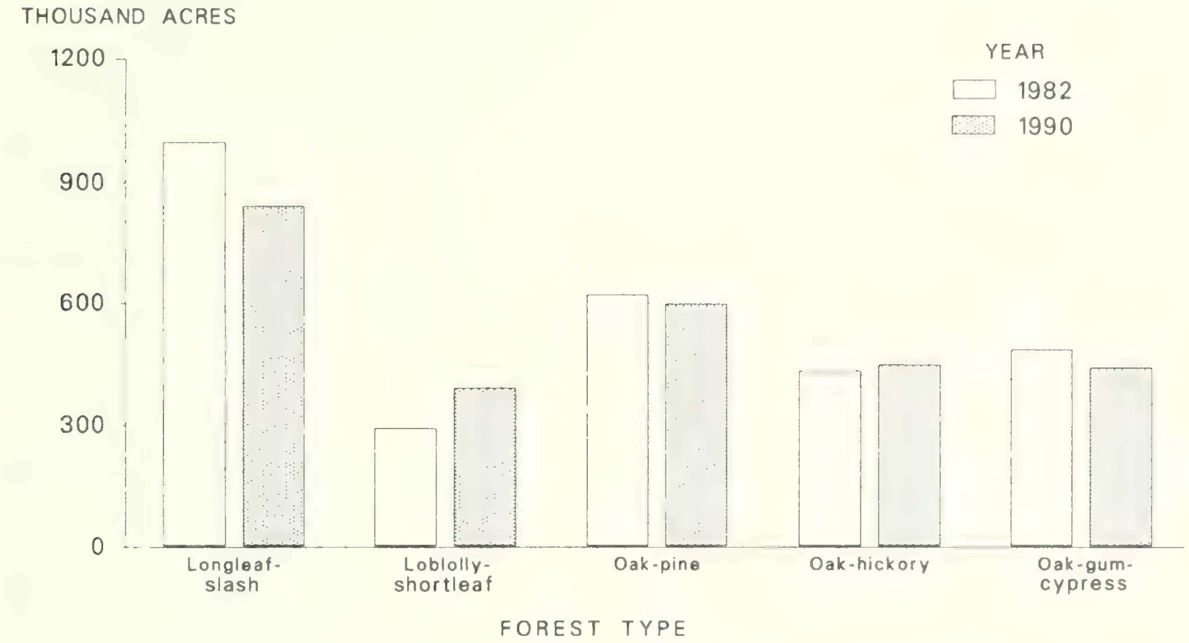

Figure 1.—*Area of timberland by forest type, Southwest-South Alabama, 1982 and 1990.*

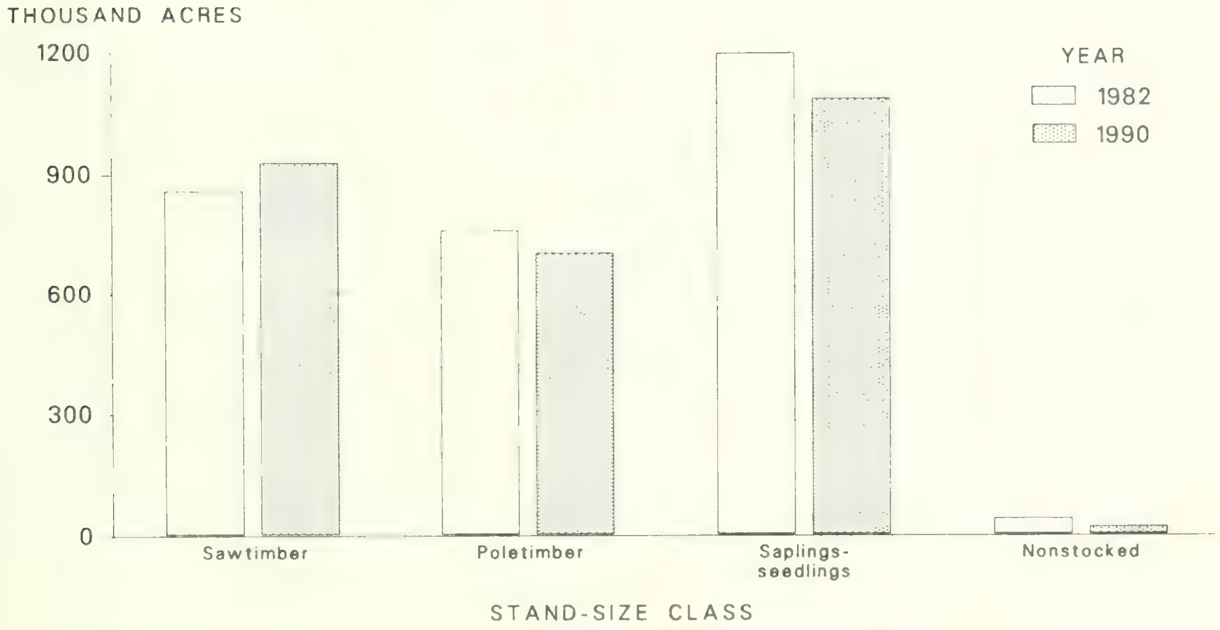

Figure 2.—*Area of timberland by stand-size class, Southwest-South Alabama, 1982 and 1990.*

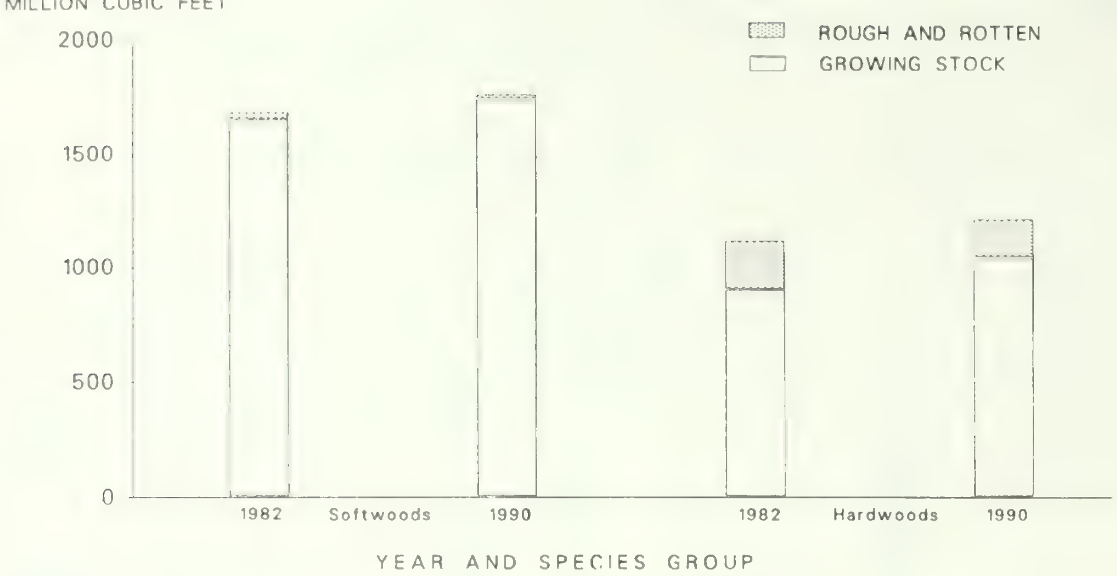

Figure 3.—*Volume of live trees on timberland by species group and class of timber, Southwest-South Alabama, 1982 and 1990.*

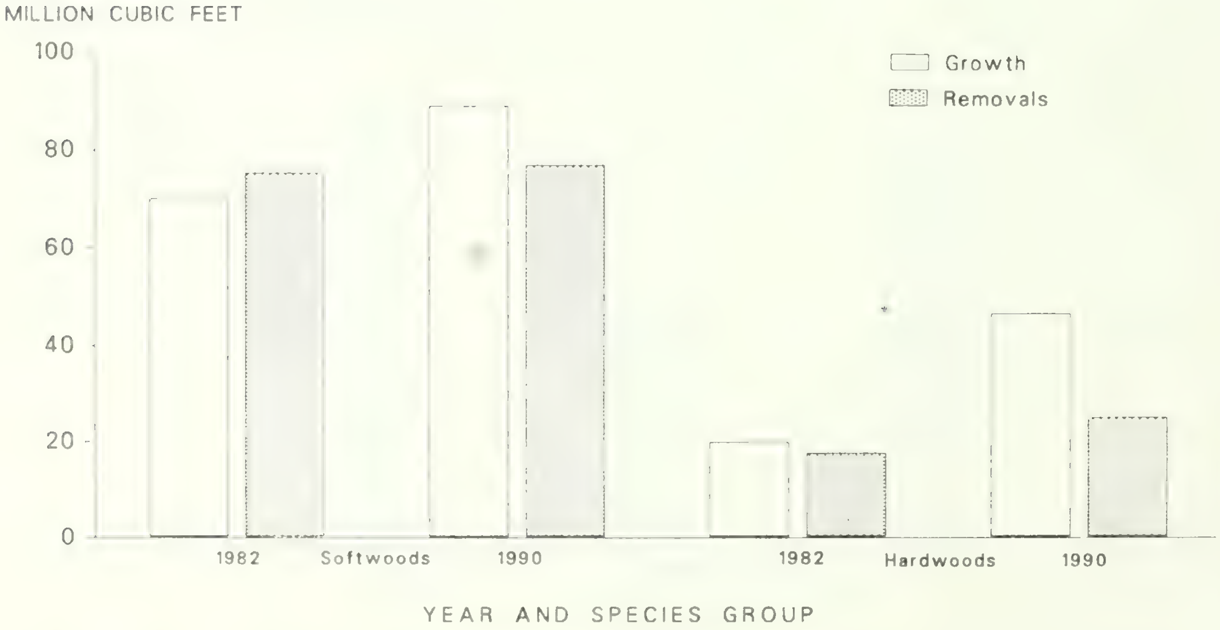

Figure 4.—*Average net annual growth and average annual removals of live trees on timberland by species group, Southwest-South Alabama, 1982 and 1990.*

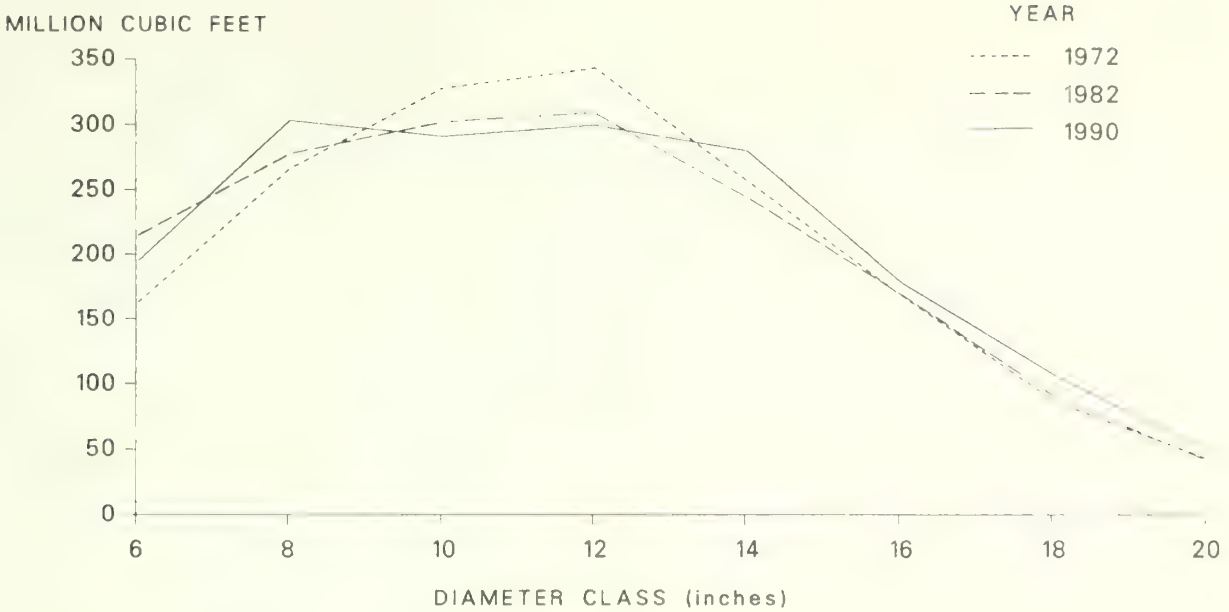

Figure 5.—*Volume of live softwood trees on timberland by diameter class, Southwest-South Alabama, 1972, 1982 and 1990.*

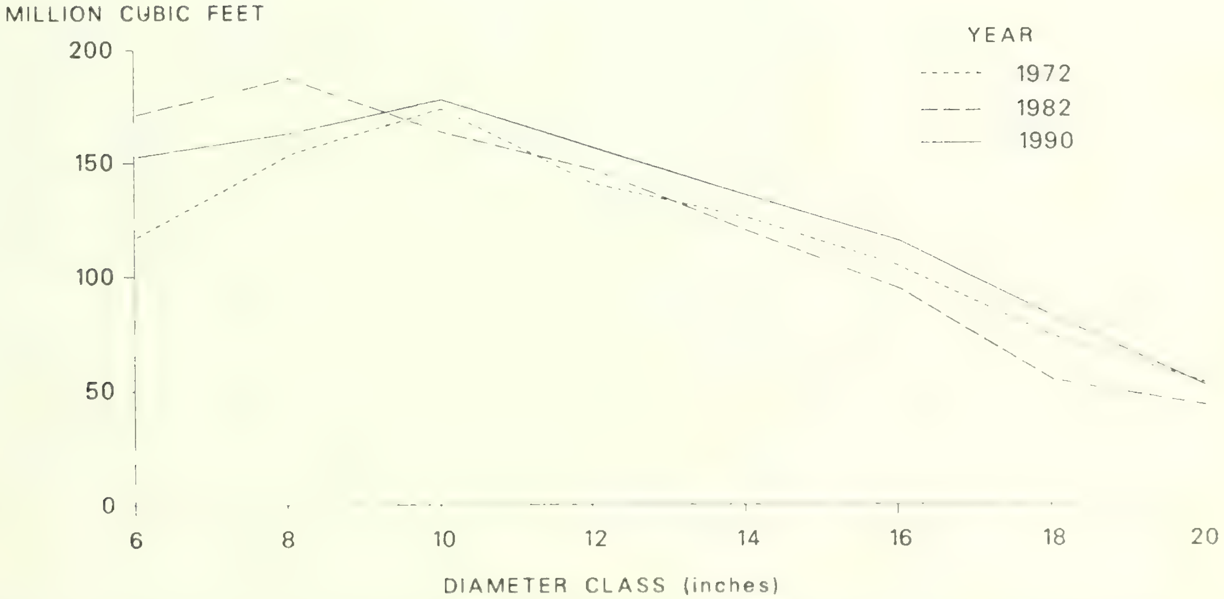

Figure 6.—*Volume of live hardwood trees on timberland by diameter class, Southwest-South Alabama, 1972, 1982 and 1990.*

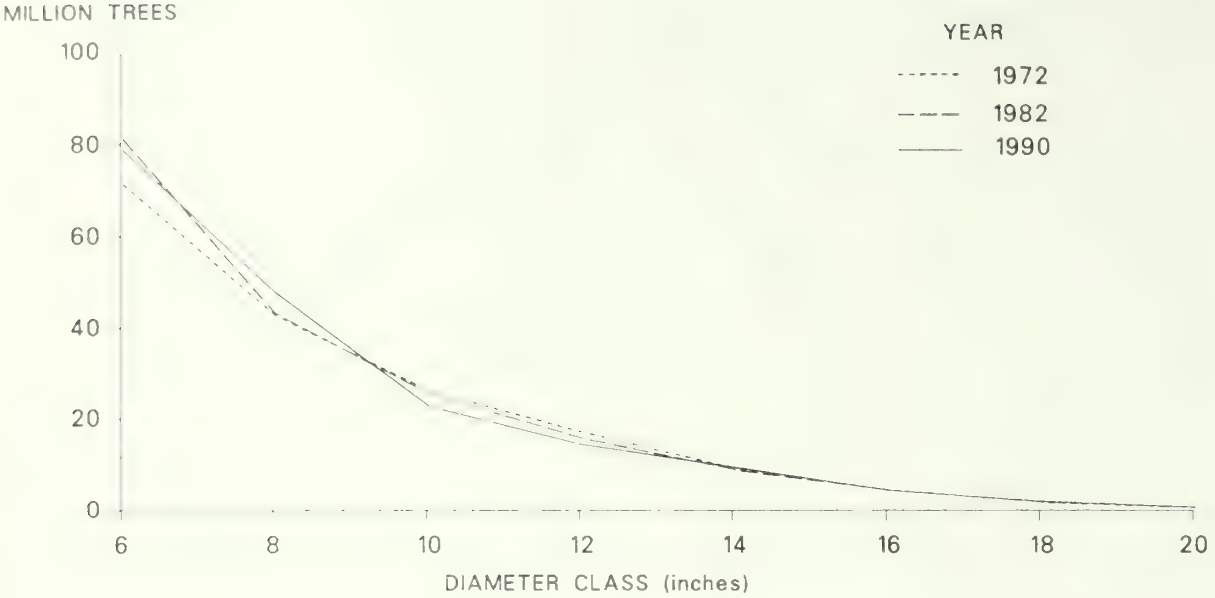

Figure 7.—*Number of live softwood trees on timberland by diameter class, Southwest-South Alabama, 1972, 1982 and 1990.*

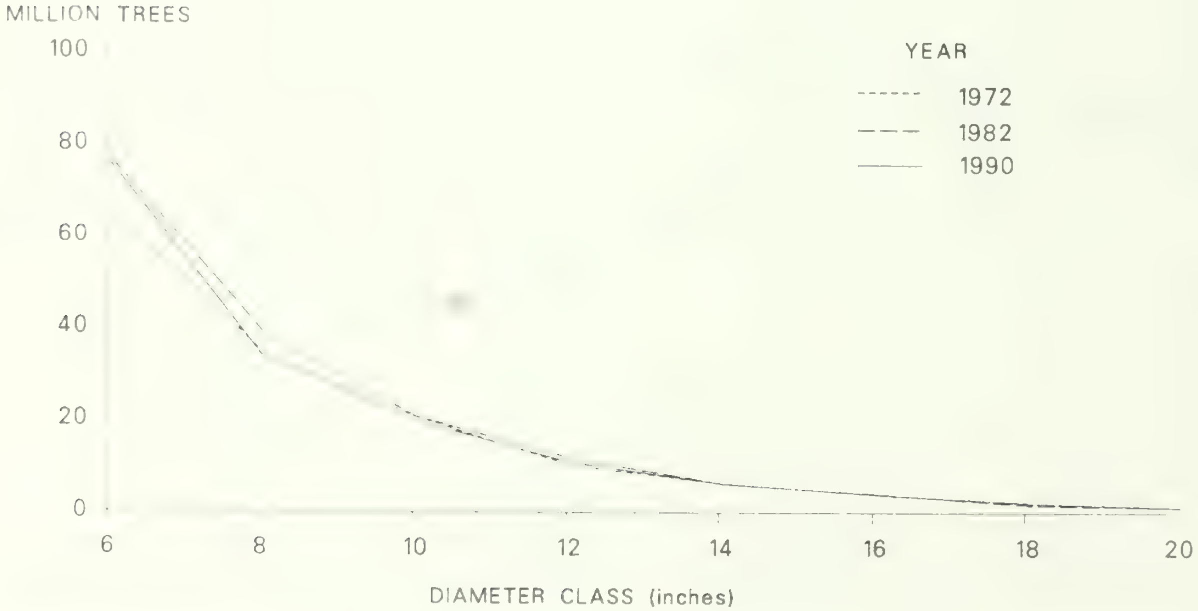

Figure 8.—*Number of live hardwood trees on timberland by diameter class, Southwest-South Alabama, 1972, 1982 and 1990.*

McWilliams, William H.; Miller, Patrick E.; Vissage, John S. 1990. Forest Statistics for Southwest-South Alabama Counties–1990. Resour. Bull. SO-155. New Orleans, LA: U. S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 30 p.

Tabulates forest resource information from a new inventory of the Southwest-South Counties of Alabama.

Additional Keywords: Area, volume, forest type, stand size, and ownership.

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